

## SHADOW - Main Result

Calculation: Alternative - Worst & Real case

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade  
Please look in WTG table

Minimum sun height over horizon for influence 3 °  
Day step for calculation 1 days  
Time step for calculation 1 minutes

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational hours are calculated from WTGs in calculation and wind distribution:

CERRA N 56,483277 E 26,150006

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Monthly aggregation of real case reduction

Idle start wind speed3,0m/s

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

DHM: DTM model

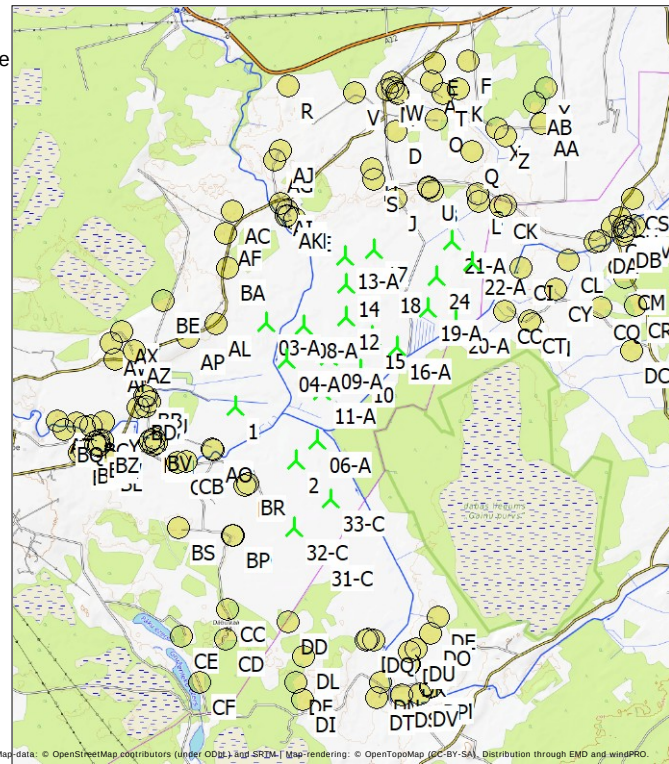
Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Geo [deg]-WGS84

WTGs



Map data: © OpenStreetMap contributors (under OGL) and SRTM; Map rendering: © OpenTopoMap (CC-BY-SA), Distribution through EMD and windPRO.

New WTG

Shadow receptor

Scale 1:125 000

|    | Longitude    | Latitude     | Z    | Row data/Description | WTG type |           | Power, rated [kW] | Rotor diameter [m] | Hub height [m] | Shadow data              |       |
|----|--------------|--------------|------|----------------------|----------|-----------|-------------------|--------------------|----------------|--------------------------|-------|
|    |              |              |      |                      | Valid    | Manufact. | Type-generator    |                    |                | Calculation distance [m] | RPM   |
|    |              |              | [m]  |                      |          |           |                   |                    |                |                          | [RPM] |
| 1  | 26,154944° E | 56,472000° N | 86,4 | 1                    | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 2  | 26,171545° E | 56,464065° N | 87,4 | 2                    | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 3  | 26,188797° E | 56,477423° N | 87,3 | 10                   | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 4  | 26,191766° E | 56,482416° N | 88,1 | 15                   | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 5  | 26,184830° E | 56,485277° N | 88,1 | 12                   | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 6  | 26,195723° E | 56,490817° N | 88,2 | 18                   | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 7  | 26,184789° E | 56,490106° N | 88,3 | 14                   | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 8  | 26,192600° E | 56,495313° N | 88,9 | 17                   | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 9  | 26,209173° E | 56,491273° N | 88,1 | 24                   | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 10 | 26,213491° E | 56,496603° N | 89,1 | 21-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 11 | 26,218949° E | 56,493438° N | 89,5 | 22-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 12 | 26,214396° E | 56,484740° N | 88,5 | 20-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 13 | 26,206995° E | 56,486499° N | 87,9 | 19-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 14 | 26,198775° E | 56,480846° N | 87,4 | 16-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 15 | 26,184611° E | 56,494373° N | 88,5 | 13-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 16 | 26,178446° E | 56,474208° N | 87,2 | 11-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 17 | 26,179996° E | 56,479330° N | 88,4 | 09-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 18 | 26,173625° E | 56,483937° N | 86,9 | 08-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 19 | 26,163370° E | 56,484575° N | 88,4 | 03-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 20 | 26,168908° E | 56,479068° N | 86,9 | 04-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 21 | 26,176971° E | 56,466954° N | 86,4 | 06-A                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 22 | 26,177736° E | 56,450016° N | 88,6 | 31-C                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 23 | 26,170673° E | 56,453686° N | 88,8 | 32-C                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |
| 24 | 26,180636° E | 56,458079° N | 88,4 | 33-C                 | Yes      | NORDEX    | N175/6.X-6 800    | 6 800              | 175,0          | 1 894                    | 10,8  |

## SHADOW - Main Result

Calculation: Alternative - Worst & Real case

### Shadow receptor-Input

| No. | Name          | Longitude    | Latitude     | Z    | Width | Height | Elevation | Slope of | Direction mode     | Eye height   |
|-----|---------------|--------------|--------------|------|-------|--------|-----------|----------|--------------------|--------------|
|     |               |              |              | [m]  | [m]   | [m]    | a.g.l.    | window   |                    | (ZVI) a.g.l. |
|     |               |              |              |      |       |        | [m]       | [°]      |                    | [m]          |
| A   | Aizkalnes     | 26,207858° E | 56,520369° N | 94,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| B   | Zvirgzdini    | 26,208124° E | 56,504040° N | 92,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| C   | Uplejas       | 26,220364° E | 56,503587° N | 90,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| D   | Druku Vecumi  | 26,198160° E | 56,512887° N | 93,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| E   | Kaijas        | 26,208687° E | 56,522987° N | 96,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| F   | Cvetkovi      | 26,217847° E | 56,523273° N | 96,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| G   | Balo ž i      | 26,198613° E | 56,518862° N | 93,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| H   | Berzi         | 26,191627° E | 56,507246° N | 92,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| I   | Kropini       | 26,207134° E | 56,504585° N | 92,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| J   | Ergli         | 26,198423° E | 56,502938° N | 91,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| K   | Nazari        | 26,214929° E | 56,519219° N | 93,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| L   | Akoti         | 26,220549° E | 56,502569° N | 90,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| M   | Linares       | 26,197407° E | 56,520072° N | 93,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| N   | Lamani 1      | 26,195936° E | 56,518989° N | 92,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| O   | Ro ž lejas    | 26,209238° E | 56,514630° N | 93,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| P   | Aizupes       | 26,199053° E | 56,518437° N | 92,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| Q   | Kumelites     | 26,218886° E | 56,509968° N | 93,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| R   | Dzila Vada    | 26,169332° E | 56,519514° N | 91,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| S   | Vecumi        | 26,192519° E | 56,505706° N | 92,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| T   | Rutini        | 26,211042° E | 56,518444° N | 93,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| U   | Viksnes       | 26,207029° E | 56,504358° N | 92,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| V   | Dimanti       | 26,187384° E | 56,518664° N | 93,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| W   | Rudzi š i     | 26,197546° E | 56,519321° N | 93,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| X   | Podnieki      | 26,225499° E | 56,513205° N | 93,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| Y   | Stimbinaja    | 26,238938° E | 56,519389° N | 93,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| Z   | Marsnica      | 26,227741° E | 56,512101° N | 91,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AA  | Vilkmui ž a   | 26,237475° E | 56,514054° N | 93,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AB  | Vecergli      | 26,235536° E | 56,517157° N | 93,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AC  | Kvie š i      | 26,154412° E | 56,500927° N | 90,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AD  | Me ž a Rasas  | 26,169055° E | 56,501189° N | 90,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AE  | Dravnieki     | 26,171153° E | 56,499901° N | 90,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AF  | Ogu Purvs     | 26,152495° E | 56,497838° N | 90,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AG  | Jaunmedni     | 26,165627° E | 56,508563° N | 92,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AH  | Graudini      | 26,169543° E | 56,500262° N | 90,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AI  | Birznieki     | 26,167532° E | 56,502200° N | 89,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AJ  | Irbites       | 26,167241° E | 56,510128° N | 91,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AK  | Ruki          | 26,168833° E | 56,500283° N | 90,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AL  | Vipmali       | 26,149905° E | 56,484230° N | 91,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AM  | Galvani 1     | 26,122805° E | 56,478966° N | 95,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AN  | Pludmales 1   | 26,148820° E | 56,465677° N | 87,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AO  | Pludmales     | 26,149040° E | 56,465610° N | 87,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AP  | Kalna Galvani | 26,142436° E | 56,482221° N | 98,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AQ  | Ziedini       | 26,114434° E | 56,468966° N | 89,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AR  | Strautini     | 26,112449° E | 56,469534° N | 89,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AS  | Druvas        | 26,131471° E | 56,473578° N | 87,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AT  | Saulkrasti    | 26,107300° E | 56,469842° N | 90,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AU  | Jaundruvas 1  | 26,131987° E | 56,472637° N | 88,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AV  | Zilites       | 26,131108° E | 56,471880° N | 88,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AW  | Avotini       | 26,121551° E | 56,481424° N | 95,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AX  | Biksti        | 26,124410° E | 56,483251° N | 96,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AY  | Tudalinas     | 26,119697° E | 56,469646° N | 90,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| AZ  | Kalnares      | 26,127965° E | 56,480344° N | 97,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BA  | Su š i        | 26,153089° E | 56,492562° N | 90,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BB  | Jaundruvas    | 26,130673° E | 56,473442° N | 87,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BC  | Straumenini   | 26,116258° E | 56,469089° N | 90,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BD  | Krasta Ozoli  | 26,128750° E | 56,471771° N | 88,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BE  | Galvani       | 26,135926° E | 56,487675° N | 95,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BF  | Mui ž nieki   | 26,113280° E | 56,465079° N | 91,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BG  | Me ž mui ž a  | 26,132979° E | 56,466265° N | 88,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BH  | Krastini      | 26,133875° E | 56,466527° N | 88,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BI  | Strauti       | 26,118340° E | 56,466957° N | 86,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BJ  | Purenes       | 26,117319° E | 56,466719° N | 87,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BK  | Uplejas       | 26,118170° E | 56,466952° N | 86,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BL  | Bazes stacija | 26,120683° E | 56,464128° N | 90,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |

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## SHADOW - Main Result

Calculation: Alternative - Worst & Real case

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| No. | Name                 | Longitude    | Latitude     | Z    | Width | Height | Elevation | Slope of | Direction mode     | Eye height   |
|-----|----------------------|--------------|--------------|------|-------|--------|-----------|----------|--------------------|--------------|
|     |                      |              |              | [m]  | [m]   | [m]    | a.g.l.    | window   |                    | (ZVI) a.g.l. |
|     |                      |              |              |      |       |        | [m]       | [°]      |                    | [m]          |
| BM  | Spridi š i           | 26,114672° E | 56,465253° N | 91,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BN  | Klavas               | 26,157722° E | 56,460261° N | 90,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BO  | Kaupres              | 26,154481° E | 56,452570° N | 90,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BP  | Kaupres 1            | 26,154736° E | 56,452617° N | 90,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BQ  | Lici š i             | 26,109041° E | 56,468627° N | 91,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BR  | Liepšala             | 26,158460° E | 56,460663° N | 91,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BS  | Me ž vidi            | 26,140069° E | 56,453828° N | 91,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BT  | Me ž a Mui ž a       | 26,131989° E | 56,466718° N | 89,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BU  | Vilni š i            | 26,132310° E | 56,466977° N | 90,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BV  | Raceni               | 26,133513° E | 56,467240° N | 89,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BW  | Vipes skola          | 26,118133° E | 56,466127° N | 90,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BX  | Vipes skola          | 26,118460° E | 56,466288° N | 90,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BY  | Vipes skola          | 26,117611° E | 56,466358° N | 90,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| BZ  | Vipes skola 1        | 26,119453° E | 56,467114° N | 88,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CA  | Slipie 1             | 26,139496° E | 56,463705° N | 87,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CB  | Upmali               | 26,141987° E | 56,463800° N | 87,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CC  | Ziemeļnieki          | 26,152996° E | 56,441528° N | 92,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CD  | Ezermui ž a          | 26,152602° E | 56,437223° N | 92,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CE  | Ezermali             | 26,140640° E | 56,437594° N | 90,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CF  | Ozolmui ž a          | 26,145561° E | 56,430795° N | 92,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CG  | Vasarnieki           | 26,261108° E | 56,498230° N | 91,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CH  | Ata š a              | 26,251712° E | 56,496522° N | 91,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CI  | Mui ž nieki          | 26,231972° E | 56,492662° N | 89,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CJ  | Rijasvecumi          | 26,227814° E | 56,501950° N | 92,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CK  | Kalvani              | 26,226341° E | 56,501709° N | 92,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CL  | Uzkalnini            | 26,244752° E | 56,493800° N | 92,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CM  | Cakstes              | 26,260191° E | 56,491064° N | 93,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CN  | Jaunie Vu š karnieki | 26,234910° E | 56,484228° N | 89,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CO  | Upmalnieki           | 26,227614° E | 56,486271° N | 89,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CP  | Gruguli              | 26,259452° E | 56,498488° N | 91,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CQ  | Aramsala             | 26,253669° E | 56,486836° N | 92,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CR  | Alksni š i           | 26,262738° E | 56,486897° N | 94,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CS  | Lejsalie š i         | 26,262300° E | 56,502792° N | 93,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CT  | Araji                | 26,234288° E | 56,484761° N | 90,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CU  | Plavinas             | 26,258552° E | 56,500071° N | 92,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CV  | Zali š i             | 26,262376° E | 56,498812° N | 91,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CW  | Grugules             | 26,256543° E | 56,498698° N | 92,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CX  | Madaras              | 26,260204° E | 56,498671° N | 91,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CY  | Vu š karnieki        | 26,241183° E | 56,489414° N | 92,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| CZ  | Vecares              | 26,260016° E | 56,497881° N | 90,6 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DA  | Strautmali           | 26,253233° E | 56,496637° N | 91,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DB  | Jaunari              | 26,259494° E | 56,497402° N | 91,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DC  | Vidsala              | 26,261621° E | 56,480364° N | 94,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DD  | Jaunie Robe ž nieki  | 26,169285° E | 56,439743° N | 89,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DE  | Smelceja             | 26,209466° E | 56,440532° N | 92,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DF  | Kukas                | 26,171356° E | 56,430866° N | 92,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DG  | O š ini              | 26,190535° E | 56,437029° N | 89,5 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DH  | O š ini              | 26,190590° E | 56,437181° N | 89,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DI  | Robe ž nieki         | 26,173089° E | 56,428132° N | 92,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DJ  | Pumpuri              | 26,202157° E | 56,433538° N | 91,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DK  | Pumpuri              | 26,201785° E | 56,433455° N | 92,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DL  | Berzkalnes           | 26,173600° E | 56,434528° N | 89,8 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DM  | Arsmenieki           | 26,207754° E | 56,430248° N | 93,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DN  | Smelceju majas       | 26,194039° E | 56,430891° N | 90,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DO  | Zemites              | 26,207501° E | 56,438015° N | 91,9 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DP  | Arsmenieki           | 26,207477° E | 56,430056° N | 93,2 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DQ  | Upi š i              | 26,192367° E | 56,437127° N | 90,1 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DR  | Aizveji              | 26,201934° E | 56,435394° N | 92,0 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DS  | Dzervites            | 26,200128° E | 56,428906° N | 91,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DT  | Jaunmasani           | 26,193181° E | 56,428587° N | 90,4 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DU  | Airites              | 26,203694° E | 56,435670° N | 91,7 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |
| DV  | Upmalas              | 26,204770° E | 56,429183° N | 92,3 | 1,0   | 1,0    | 1,0       | 90,0     | "Green house mode" | 2,0          |

## SHADOW - Main Result

Calculation: Alternative - Worst & Real case

### Calculation Results

Shadow receptor

| No. | Name             | Shadow, worst case   |                         |                          | Shadow, expected values |
|-----|------------------|----------------------|-------------------------|--------------------------|-------------------------|
|     |                  | Shadow hours         | Shadow days             | Max shadow               | Shadow hours            |
|     |                  | per year<br>[h/year] | per year<br>[days/year] | hours per day<br>[h/day] | per year<br>[h/year]    |
|     | A Aizkalnes      | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | B Zvirgzdini     | 145:04               | 115                     | 1:39                     | 10:37                   |
|     | C Uplejas        | 91:57                | 105                     | 1:09                     | 6:51                    |
|     | D Druku Vecumi   | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | E Kaijas         | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | F Cvetkovi       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | G Balo ž i       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | H Berzi          | 21:43                | 65                      | 0:35                     | 1:29                    |
|     | I Kropini        | 129:28               | 108                     | 1:32                     | 9:13                    |
|     | J Ergli          | 169:30               | 135                     | 1:54                     | 13:29                   |
|     | K Nazari         | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | L Akoti          | 118:46               | 122                     | 1:16                     | 9:54                    |
|     | M Linares        | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | N Lamani 1       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | O Ro ž lejas     | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | P Aizupes        | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | Q Kumelites      | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | R Dzila Vada     | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | S Vecumi         | 53:18                | 90                      | 1:03                     | 3:54                    |
|     | T Rutini         | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | U Viksnes        | 134:06               | 110                     | 1:32                     | 9:41                    |
|     | V Dimanti        | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | W Rudzi š i      | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | X Podnieki       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | Y Stimbinaja     | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | Z Marsnica       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AA Vilkmui ž a   | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AB Vecergli      | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AC Kvie š i      | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AD Me ž a Rasas  | 57:26                | 152                     | 0:38                     | 6:09                    |
|     | AE Dravnieki     | 89:38                | 166                     | 0:51                     | 9:52                    |
|     | AF Ogu Purvs     | 13:58                | 42                      | 0:25                     | 0:48                    |
|     | AG Jaunmedni     | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AH Graudini      | 58:55                | 137                     | 0:45                     | 7:04                    |
|     | AI Birznieki     | 48:52                | 144                     | 0:31                     | 4:52                    |
|     | AJ Irbites       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AK Ruki          | 54:02                | 128                     | 0:44                     | 6:39                    |
|     | AL Vipmali       | 73:49                | 155                     | 0:49                     | 18:04                   |
|     | AM Galvani 1     | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AN Pludmales 1   | 22:24                | 63                      | 0:29                     | 5:54                    |
|     | AO Pludmales     | 34:07                | 105                     | 0:29                     | 6:51                    |
|     | AP Kalna Galvani | 62:29                | 153                     | 0:32                     | 9:51                    |
|     | AQ Ziedini       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AR Strautini     | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AS Druvas        | 12:39                | 36                      | 0:28                     | 3:08                    |
|     | AT Saulkrasti    | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AU Jaundruvas 1  | 13:34                | 36                      | 0:29                     | 3:33                    |
|     | AV Zilites       | 12:46                | 36                      | 0:28                     | 3:29                    |
|     | AW Avotini       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AX Biksti        | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AY Tudalinas     | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | AZ Kalnares      | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | BA Su š i        | 64:12                | 119                     | 0:52                     | 5:04                    |
|     | BB Jaundruvas    | 11:46                | 34                      | 0:27                     | 2:56                    |
|     | BC Straumenini   | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | BD Krasta Ozoli  | 10:18                | 33                      | 0:25                     | 2:48                    |
|     | BE Galvani       | 8:14                 | 29                      | 0:24                     | 1:52                    |
|     | BF Mui ž nieki   | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | BG Me ž mui ž a  | 21:45                | 60                      | 0:29                     | 7:10                    |
|     | BH Krastini      | 24:39                | 66                      | 0:30                     | 8:08                    |
|     | BI Strauti       | 0:00                 | 0                       | 0:00                     | 0:00                    |
|     | BJ Purenes       | 0:00                 | 0                       | 0:00                     | 0:00                    |

To be continued on next page...

## SHADOW - Main Result

Calculation: Alternative - Worst & Real case

...continued from previous page

|     |                      | Shadow, worst case |             | Shadow, expected values |              |
|-----|----------------------|--------------------|-------------|-------------------------|--------------|
| No. | Name                 | Shadow hours       | Shadow days | Max shadow              | Shadow hours |
|     |                      | per year           | per year    | hours per day           | per year     |
|     |                      | [h/year]           | [days/year] | [h/day]                 | [h/year]     |
| BK  | Uplejas              | 0:00               | 0           | 0:00                    | 0:00         |
| BL  | Bazes stacija        | 0:00               | 0           | 0:00                    | 0:00         |
| BM  | Spridi š i           | 0:00               | 0           | 0:00                    | 0:00         |
| BN  | Klavas               | 127:34             | 194         | 1:06                    | 34:06        |
| BO  | Kaupres              | 55:20              | 112         | 0:51                    | 16:17        |
| BP  | Kaupres 1            | 56:49              | 111         | 0:52                    | 16:43        |
| BQ  | Lici š i             | 0:00               | 0           | 0:00                    | 0:00         |
| BR  | Liepsala             | 141:20             | 199         | 1:11                    | 37:17        |
| BS  | Me ž vidi            | 6:56               | 28          | 0:22                    | 1:50         |
| BT  | Me ž a Mui ž a       | 17:32              | 50          | 0:28                    | 5:44         |
| BU  | Vilni š i            | 17:53              | 50          | 0:28                    | 5:50         |
| BV  | Raceni               | 20:51              | 56          | 0:30                    | 6:48         |
| BW  | Vipes skola          | 0:00               | 0           | 0:00                    | 0:00         |
| BX  | Vipes skola          | 0:00               | 0           | 0:00                    | 0:00         |
| BY  | Vipes skola          | 0:00               | 0           | 0:00                    | 0:00         |
| BZ  | Vipes skola 1        | 0:00               | 0           | 0:00                    | 0:00         |
| CA  | Slipie 1             | 0:00               | 0           | 0:00                    | 0:00         |
| CB  | Upmali               | 7:42               | 29          | 0:23                    | 2:05         |
| CC  | Ziemelnieki          | 24:00              | 77          | 0:25                    | 8:00         |
| CD  | Ezermui ž a          | 0:00               | 0           | 0:00                    | 0:00         |
| CE  | Ezermali             | 0:00               | 0           | 0:00                    | 0:00         |
| CF  | Ozolmui ž a          | 0:00               | 0           | 0:00                    | 0:00         |
| CG  | Vasarnieki           | 0:00               | 0           | 0:00                    | 0:00         |
| CH  | Ata š a              | 0:00               | 0           | 0:00                    | 0:00         |
| CI  | Mui ž nieki          | 119:52             | 220         | 1:14                    | 31:30        |
| CJ  | Rijasvecumi          | 91:29              | 146         | 1:02                    | 9:14         |
| CK  | Kalvani              | 103:06             | 150         | 1:06                    | 10:26        |
| CL  | Uzkalnini            | 10:21              | 33          | 0:26                    | 2:45         |
| CM  | Cakstes              | 0:00               | 0           | 0:00                    | 0:00         |
| CN  | Jaunie Vu š karnieki | 40:37              | 94          | 0:51                    | 11:52        |
| CO  | Upmalnieki           | 104:27             | 192         | 1:13                    | 29:05        |
| CP  | Gruguli              | 0:00               | 0           | 0:00                    | 0:00         |
| CQ  | Aramsala             | 0:00               | 0           | 0:00                    | 0:00         |
| CR  | Alksni š i           | 0:00               | 0           | 0:00                    | 0:00         |
| CS  | Lejsalie š i         | 0:00               | 0           | 0:00                    | 0:00         |
| CT  | Araji                | 42:46              | 96          | 0:54                    | 12:20        |
| CU  | Plavinas             | 0:00               | 0           | 0:00                    | 0:00         |
| CV  | Zali š i             | 0:00               | 0           | 0:00                    | 0:00         |
| CW  | Grugules             | 0:00               | 0           | 0:00                    | 0:00         |
| CX  | Madaras              | 0:00               | 0           | 0:00                    | 0:00         |
| CY  | Vu š karnieki        | 36:56              | 92          | 0:46                    | 10:18        |
| CZ  | Vecares              | 0:00               | 0           | 0:00                    | 0:00         |
| DA  | Strautmali           | 0:00               | 0           | 0:00                    | 0:00         |
| DB  | Jaunari              | 0:00               | 0           | 0:00                    | 0:00         |
| DC  | Vidsala              | 0:00               | 0           | 0:00                    | 0:00         |
| DD  | Jaunie Robe ž nieki  | 0:00               | 0           | 0:00                    | 0:00         |
| DE  | Smelceja             | 0:00               | 0           | 0:00                    | 0:00         |
| DF  | Kukas                | 0:00               | 0           | 0:00                    | 0:00         |
| DG  | O š ini              | 0:00               | 0           | 0:00                    | 0:00         |
| DH  | O š ini              | 0:00               | 0           | 0:00                    | 0:00         |
| DI  | Robe ž nieki         | 0:00               | 0           | 0:00                    | 0:00         |
| DJ  | Pumpuri              | 0:00               | 0           | 0:00                    | 0:00         |
| DK  | Pumpuri              | 0:00               | 0           | 0:00                    | 0:00         |
| DL  | Berzkalnes           | 0:00               | 0           | 0:00                    | 0:00         |
| DM  | Arsmenieki           | 0:00               | 0           | 0:00                    | 0:00         |
| DN  | Smelceju majas       | 0:00               | 0           | 0:00                    | 0:00         |
| DO  | Zemites              | 0:00               | 0           | 0:00                    | 0:00         |
| DP  | Arsmenieki           | 0:00               | 0           | 0:00                    | 0:00         |
| DQ  | Upi š i              | 0:00               | 0           | 0:00                    | 0:00         |
| DR  | Aizveji              | 0:00               | 0           | 0:00                    | 0:00         |
| DS  | Dzervites            | 0:00               | 0           | 0:00                    | 0:00         |
| DT  | Jaunmasani           | 0:00               | 0           | 0:00                    | 0:00         |
| DU  | Airites              | 0:00               | 0           | 0:00                    | 0:00         |
| DV  | Upmalas              | 0:00               | 0           | 0:00                    | 0:00         |



## SHADOW - Main Result

### Calculation: Alternative - Worst & Real case

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case<br>[h/year] | Expected<br>[h/year] |
|-----|------|------------------------|----------------------|
| 1   | 1    | 108:17                 | 22:21                |
| 2   | 2    | 93:52                  | 29:32                |
| 3   | 10   | 0:00                   | 0:00                 |
| 4   | 15   | 0:00                   | 0:00                 |
| 5   | 12   | 11:49                  | 0:40                 |
| 6   | 18   | 36:27                  | 2:53                 |
| 7   | 14   | 64:58                  | 4:28                 |
| 8   | 17   | 142:59                 | 13:03                |
| 9   | 24   | 140:59                 | 22:47                |
| 10  | 21-A | 288:32                 | 35:30                |
| 11  | 22-A | 243:38                 | 34:45                |
| 12  | 20-A | 88:58                  | 21:02                |
| 13  | 19-A | 38:19                  | 9:53                 |
| 14  | 16-A | 6:58                   | 1:24                 |
| 15  | 13-A | 111:29                 | 11:25                |
| 16  | 11-A | 0:00                   | 0:00                 |
| 17  | 09-A | 0:00                   | 0:00                 |
| 18  | 08-A | 25:29                  | 4:50                 |
| 19  | 03-A | 129:31                 | 24:40                |
| 20  | 04-A | 46:50                  | 6:05                 |
| 21  | 06-A | 47:39                  | 15:30                |
| 22  | 31-C | 56:54                  | 12:36                |
| 23  | 32-C | 85:21                  | 16:18                |
| 24  | 33-C | 30:46                  | 8:18                 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: A - Aizkalnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:18  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:35    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:11 | 22:01 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:06 | 20:10 | 21:13 | 22:02 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:01   | 17:06    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:08 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:29    | 18:29 | 20:33 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 19:00     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:15   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: B - Zvirgzdini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |               | February |               | March | April | May   | June  |
|---------------------|---------|---------------|----------|---------------|-------|-------|-------|-------|
| 1                   | 08:48   | 09:54 (11)    | 08:13    | 10:39 (10)    | 07:09 | 06:47 | 05:30 | 04:33 |
|                     | 15:45   | 98 14:30 (6)  | 16:42    | 68 16:09 (15) | 17:44 | 19:50 | 20:52 | 21:50 |
| 2                   | 08:48   | 09:55 (11)    | 08:11    | 10:41 (10)    | 07:06 | 06:44 | 05:28 | 04:32 |
|                     | 15:46   | 98 14:31 (6)  | 16:44    | 69 16:12 (15) | 17:46 | 19:52 | 20:54 | 21:51 |
| 3                   | 08:48   | 09:55 (11)    | 08:09    | 10:43 (10)    | 07:04 | 06:41 | 05:26 | 04:31 |
|                     | 15:47   | 98 14:31 (6)  | 16:46    | 69 16:15 (15) | 17:48 | 19:54 | 20:56 | 21:52 |
| 4                   | 08:47   | 09:56 (11)    | 08:07    | 10:44 (10)    | 07:01 | 06:39 | 05:23 | 04:30 |
|                     | 15:49   | 98 14:32 (6)  | 16:48    | 68 16:16 (15) | 17:51 | 19:56 | 20:58 | 21:54 |
| 5                   | 08:47   | 09:56 (11)    | 08:05    | 10:47 (10)    | 06:58 | 06:36 | 05:21 | 04:29 |
|                     | 15:50   | 97 14:32 (6)  | 16:51    | 64 16:19 (15) | 17:53 | 19:58 | 21:00 | 21:55 |
| 6                   | 08:46   | 09:56 (11)    | 08:03    | 10:53 (10)    | 06:56 | 06:33 | 05:19 | 04:28 |
|                     | 15:51   | 97 14:31 (6)  | 16:53    | 55 16:22 (15) | 17:55 | 20:00 | 21:02 | 21:56 |
| 7                   | 08:46   | 09:56 (11)    | 08:01    | 15:22 (8)     | 06:53 | 06:31 | 05:17 | 04:27 |
|                     | 15:53   | 96 14:31 (6)  | 16:55    | 50 16:23 (15) | 17:57 | 20:02 | 21:04 | 21:57 |
| 8                   | 08:45   | 09:57 (11)    | 07:58    | 15:23 (8)     | 06:51 | 06:28 | 05:14 | 04:26 |
|                     | 15:54   | 95 14:31 (6)  | 16:57    | 48 16:23 (15) | 17:59 | 20:04 | 21:07 | 21:58 |
| 9                   | 08:44   | 09:57 (11)    | 07:56    | 15:25 (8)     | 06:48 | 06:25 | 05:12 | 04:26 |
|                     | 15:56   | 94 14:31 (6)  | 16:59    | 46 16:24 (15) | 18:01 | 20:06 | 21:09 | 21:59 |
| 10                  | 08:44   | 09:58 (11)    | 07:54    | 15:26 (8)     | 06:45 | 06:23 | 05:10 | 04:25 |
|                     | 15:58   | 93 14:31 (6)  | 17:02    | 43 16:23 (15) | 18:03 | 20:08 | 21:11 | 22:00 |
| 11                  | 08:43   | 09:58 (11)    | 07:52    | 15:28 (8)     | 06:43 | 06:20 | 05:08 | 04:24 |
|                     | 15:59   | 92 14:31 (6)  | 17:04    | 39 16:23 (15) | 18:06 | 20:10 | 21:13 | 22:01 |
| 12                  | 08:42   | 09:59 (11)    | 07:50    | 15:31 (8)     | 06:40 | 06:18 | 05:06 | 04:24 |
|                     | 16:01   | 90 14:31 (6)  | 17:06    | 33 16:23 (15) | 18:08 | 20:13 | 21:15 | 22:02 |
| 13                  | 08:41   | 10:00 (11)    | 07:47    | 16:02 (15)    | 06:37 | 06:15 | 05:04 | 04:23 |
|                     | 16:03   | 88 14:30 (6)  | 17:08    | 20 16:22 (15) | 18:10 | 20:15 | 21:16 | 22:03 |
| 14                  | 08:40   | 10:00 (11)    | 07:45    | 16:03 (15)    | 06:35 | 06:12 | 05:02 | 04:23 |
|                     | 16:04   | 83 14:28 (6)  | 17:11    | 18 16:21 (15) | 18:12 | 20:17 | 21:18 | 22:04 |
| 15                  | 08:39   | 10:01 (11)    | 07:43    | 16:04 (15)    | 06:32 | 06:10 | 05:00 | 04:23 |
|                     | 16:06   | 77 14:26 (6)  | 17:13    | 16 16:20 (15) | 18:14 | 20:19 | 21:20 | 22:05 |
| 16                  | 08:38   | 10:01 (11)    | 07:41    | 16:06 (15)    | 06:29 | 06:07 | 04:58 | 04:22 |
|                     | 16:08   | 74 11:15 (10) | 17:15    | 12 16:18 (15) | 18:16 | 20:21 | 21:22 | 22:05 |
| 17                  | 08:36   | 10:02 (11)    | 07:38    | 16:10 (15)    | 06:27 | 06:05 | 04:56 | 04:22 |
|                     | 16:10   | 79 15:34 (8)  | 17:17    | 4 16:14 (15)  | 18:18 | 20:23 | 21:24 | 22:06 |
| 18                  | 08:35   | 10:02 (11)    | 07:36    |               | 06:24 | 06:02 | 04:54 | 04:22 |
|                     | 16:12   | 83 15:35 (8)  | 17:20    |               | 18:20 | 20:25 | 21:26 | 22:06 |
| 19                  | 08:34   | 10:04 (11)    | 07:33    |               | 06:21 | 06:00 | 04:53 | 04:22 |
|                     | 16:14   | 85 15:38 (8)  | 17:22    |               | 18:22 | 20:27 | 21:28 | 22:07 |
| 20                  | 08:33   | 10:05 (11)    | 07:31    |               | 06:19 | 05:57 | 04:51 | 04:22 |
|                     | 16:16   | 88 15:40 (8)  | 17:24    |               | 18:25 | 20:29 | 21:30 | 22:07 |
| 21                  | 08:31   | 10:05 (11)    | 07:29    |               | 06:16 | 05:54 | 04:49 | 04:22 |
|                     | 16:18   | 91 15:42 (8)  | 17:26    |               | 18:27 | 20:31 | 21:32 | 22:07 |
| 22                  | 08:30   | 10:07 (11)    | 07:26    |               | 06:13 | 05:52 | 04:47 | 04:22 |
|                     | 16:20   | 90 15:44 (8)  | 17:29    |               | 18:29 | 20:33 | 21:33 | 22:08 |
| 23                  | 08:28   | 10:08 (11)    | 07:24    |               | 06:11 | 05:49 | 04:46 | 04:23 |
|                     | 16:22   | 90 15:45 (8)  | 17:31    |               | 18:31 | 20:35 | 21:35 | 22:08 |
| 24                  | 08:27   | 10:10 (11)    | 07:21    |               | 06:08 | 05:47 | 04:44 | 04:23 |
|                     | 16:24   | 87 15:46 (8)  | 17:33    |               | 18:33 | 20:38 | 21:37 | 22:08 |
| 25                  | 08:25   | 10:12 (11)    | 07:19    |               | 06:05 | 05:45 | 04:43 | 04:23 |
|                     | 16:26   | 84 15:47 (8)  | 17:35    |               | 18:35 | 20:40 | 21:39 | 22:08 |
| 26                  | 08:23   | 10:16 (11)    | 07:16    |               | 06:03 | 05:42 | 04:41 | 04:24 |
|                     | 16:28   | 76 15:48 (8)  | 17:37    |               | 18:37 | 20:42 | 21:40 | 22:08 |
| 27                  | 08:22   | 10:33 (10)    | 07:14    |               | 06:00 | 05:40 | 04:40 | 04:24 |
|                     | 16:31   | 70 15:48 (8)  | 17:40    |               | 18:39 | 20:44 | 21:42 | 22:08 |
| 28                  | 08:20   | 10:34 (10)    | 07:11    |               | 05:57 | 05:37 | 04:38 | 04:25 |
|                     | 16:33   | 71 15:49 (8)  | 17:42    |               | 18:41 | 20:46 | 21:44 | 22:08 |
| 29                  | 08:18   | 10:35 (10)    |          |               | 05:55 | 05:35 | 04:37 | 04:25 |
|                     | 16:35   | 69 15:49 (8)  |          |               | 18:43 | 20:48 | 21:45 | 22:07 |
| 30                  | 08:16   | 10:36 (10)    |          |               | 06:52 | 05:33 | 04:36 | 04:26 |
|                     | 16:37   | 69 15:50 (8)  |          |               | 19:45 | 20:50 | 21:47 | 22:07 |
| 31                  | 08:14   | 10:38 (10)    |          |               | 06:49 |       | 04:34 |       |
|                     | 16:39   | 65 15:50 (8)  |          |               | 19:48 |       | 21:48 |       |
| Potential sun hours | 235     |               | 265      |               | 365   | 425   | 507   | 529   |
| Total, worst case   |         | 2665          |          | 722           |       |       |       |       |
| Sun reduction       |         | 0,15          |          | 0,24          |       |       |       |       |
| Oper. time red.     |         | 0,94          |          | 0,94          |       |       |       |       |
| Wind dir. red.      |         | 0,62          |          | 0,65          |       |       |       |       |
| Total reduction     |         | 0,09          |          | 0,15          |       |       |       |       |
| Total, real         |         | 239           |          | 107           |       |       |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: B - Zvirgzdini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July  | August | September | October | November   | December   |
|---------------------|-------|--------|-----------|---------|------------|------------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14   | 07:19      | 08:21      |
| 2                   | 22:07 | 21:26  | 20:12     | 18:52   | 16:34      | 14:56 (8)  |
| 3                   | 04:28 | 05:14  | 06:16     | 07:16   | 07:21      | 08:23      |
| 4                   | 22:06 | 21:24  | 20:09     | 18:49   | 16:31      | 14:53 (15) |
| 5                   | 04:28 | 05:16  | 06:18     | 07:18   | 07:24      | 08:24      |
| 6                   | 22:06 | 21:22  | 20:07     | 18:46   | 16:29      | 14:53 (15) |
| 7                   | 04:29 | 05:18  | 06:20     | 07:20   | 07:26      | 08:26      |
| 8                   | 22:05 | 21:20  | 20:04     | 18:44   | 16:27      | 14:53 (15) |
| 9                   | 04:30 | 05:20  | 06:22     | 07:22   | 07:28      | 08:28      |
| 10                  | 22:04 | 21:17  | 20:01     | 18:41   | 16:25      | 14:53 (15) |
| 11                  | 04:31 | 05:22  | 06:24     | 07:24   | 07:30      | 08:29      |
| 12                  | 22:04 | 21:15  | 19:59     | 18:38   | 16:23      | 14:50 (15) |
| 13                  | 04:32 | 05:24  | 06:26     | 07:26   | 07:32      | 08:31      |
| 14                  | 22:03 | 21:13  | 19:56     | 18:36   | 16:21      | 14:48 (15) |
| 15                  | 04:34 | 05:26  | 06:28     | 07:28   | 07:34      | 08:32      |
| 16                  | 22:02 | 21:11  | 19:53     | 18:33   | 16:19      | 14:46 (15) |
| 17                  | 04:35 | 05:28  | 06:30     | 07:30   | 07:37      | 08:34      |
| 18                  | 22:01 | 21:09  | 19:51     | 18:30   | 16:17      | 14:43 (15) |
| 19                  | 04:36 | 05:30  | 06:32     | 07:32   | 07:39      | 08:35      |
| 20                  | 22:00 | 21:06  | 19:48     | 18:28   | 16:15      | 14:42 (15) |
| 21                  | 04:37 | 05:32  | 06:34     | 07:34   | 07:41      | 08:36      |
| 22                  | 21:59 | 21:04  | 19:45     | 18:25   | 16:13      | 14:39 (15) |
| 23                  | 04:39 | 05:34  | 06:36     | 07:37   | 07:43      | 08:37      |
| 24                  | 21:58 | 21:02  | 19:43     | 18:23   | 16:11      | 14:37 (8)  |
| 25                  | 04:40 | 05:36  | 06:38     | 07:39   | 07:45      | 08:39      |
| 26                  | 21:57 | 20:59  | 19:40     | 18:20   | 16:09      | 14:35 (8)  |
| 27                  | 04:41 | 05:38  | 06:40     | 07:41   | 07:47      | 08:40      |
| 28                  | 21:56 | 20:57  | 19:37     | 18:17   | 16:07      | 14:33 (8)  |
| 29                  | 04:43 | 05:40  | 06:42     | 07:43   | 07:50      | 08:41      |
| 30                  | 21:54 | 20:55  | 19:35     | 18:15   | 16:05      | 14:32 (8)  |
| 31                  | 04:44 | 05:42  | 06:44     | 07:45   | 07:52      | 08:42      |
| 32                  | 21:53 | 20:52  | 19:32     | 18:12   | 16:03      | 14:31 (8)  |
| 33                  | 04:46 | 05:44  | 06:46     | 07:47   | 07:54      | 08:43      |
| 34                  | 21:52 | 20:50  | 19:29     | 18:10   | 16:02      | 14:30 (8)  |
| 35                  | 04:47 | 05:46  | 06:48     | 07:49   | 07:56      | 08:44      |
| 36                  | 21:50 | 20:48  | 19:27     | 18:07   | 16:00      | 14:28 (8)  |
| 37                  | 04:49 | 05:48  | 06:50     | 07:51   | 07:58      | 08:44      |
| 38                  | 21:49 | 20:45  | 19:24     | 18:05   | 15:58      | 14:26 (8)  |
| 39                  | 04:51 | 05:50  | 06:52     | 07:53   | 08:00      | 08:45      |
| 40                  | 21:47 | 20:43  | 19:21     | 18:02   | 15:57      | 14:25 (8)  |
| 41                  | 04:52 | 05:52  | 06:54     | 07:55   | 08:02      | 08:46      |
| 42                  | 21:46 | 20:40  | 19:18     | 18:00   | 15:55      | 14:24 (8)  |
| 43                  | 04:54 | 05:54  | 06:56     | 07:58   | 08:04      | 08:46      |
| 44                  | 21:44 | 20:38  | 19:16     | 17:57   | 15:54      | 14:23 (8)  |
| 45                  | 04:56 | 05:56  | 06:58     | 08:00   | 08:06      | 08:47      |
| 46                  | 21:42 | 20:35  | 19:13     | 17:55   | 15:52      | 14:22 (8)  |
| 47                  | 04:57 | 05:58  | 07:00     | 08:02   | 08:08      | 08:47      |
| 48                  | 21:41 | 20:33  | 19:10     | 17:52   | 15:51      | 14:21 (8)  |
| 49                  | 04:59 | 06:00  | 07:02     | 08:04   | 08:10      | 08:48      |
| 50                  | 21:39 | 20:30  | 19:08     | 17:50   | 15:49      | 14:20 (8)  |
| 51                  | 05:01 | 06:02  | 07:04     | 08:06   | 15:37 (15) | 08:12      |
| 52                  | 21:37 | 20:28  | 19:05     | 16:48   | 15:47 (15) | 08:12      |
| 53                  | 05:03 | 06:04  | 07:06     | 08:08   | 15:34 (15) | 08:14      |
| 54                  | 21:35 | 20:25  | 19:02     | 16:45   | 15:49 (15) | 08:14      |
| 55                  | 05:05 | 06:06  | 07:08     | 08:11   | 15:33 (15) | 08:16      |
| 56                  | 21:34 | 20:22  | 19:00     | 16:43   | 15:50 (15) | 08:16      |
| 57                  | 05:07 | 06:08  | 07:10     | 08:13   | 15:32 (15) | 08:17      |
| 58                  | 21:32 | 20:20  | 18:57     | 16:41   | 15:52 (15) | 08:17      |
| 59                  | 05:08 | 06:10  | 07:12     | 08:15   | 15:01 (8)  | 08:19      |
| 60                  | 21:30 | 20:17  | 18:54     | 16:38   | 15:52 (15) | 08:19      |
| 61                  | 05:10 | 06:12  |           | 07:17   | 14:59 (8)  | 08:19      |
| 62                  | 21:28 | 20:15  |           | 16:36   | 15:53 (15) | 08:19      |
| Potential sun hours | 530   | 470    | 385       | 324     | 248        | 216        |
| Total, worst case   |       |        |           | 129     | 2168       | 3020       |
| Sun reduction       |       |        |           | 0,27    | 0,09       | 0,09       |
| Oper. time red.     |       |        |           | 0,94    | 0,94       | 0,94       |
| Wind dir. red.      |       |        |           | 0,67    | 0,63       | 0,62       |
| Total reduction     |       |        |           | 0,17    | 0,05       | 0,05       |
| Total, real         |       |        |           | 22      | 118        | 151        |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: C - Uplejas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January              | February                                | March                        | April                   | May                     | June                    |
|---------------------|----------------------|-----------------------------------------|------------------------------|-------------------------|-------------------------|-------------------------|
| 1                   | 08:48<br>15:45<br>69 | 12:20 (11)<br>14:35 (10)<br>16:42<br>44 | 14:06 (10)<br>17:44<br>19:50 | 07:09<br>17:44<br>19:50 | 06:47<br>19:50<br>20:52 | 04:33<br>21:50<br>21:50 |
| 2                   | 08:48<br>15:46<br>68 | 12:22 (11)<br>14:36 (10)<br>16:44<br>42 | 14:07 (10)<br>17:46<br>19:52 | 07:06<br>17:46<br>19:52 | 06:44<br>19:52<br>20:54 | 04:32<br>21:51<br>21:51 |
| 3                   | 08:48<br>15:47<br>68 | 12:22 (11)<br>14:36 (10)<br>16:46<br>41 | 14:07 (10)<br>17:48<br>19:54 | 07:04<br>17:48<br>19:54 | 06:41<br>19:54<br>20:56 | 04:31<br>21:52<br>21:52 |
| 4                   | 08:47<br>15:48<br>69 | 12:23 (11)<br>14:38 (10)<br>16:48<br>40 | 14:08 (10)<br>17:50<br>19:56 | 07:01<br>17:50<br>19:56 | 06:39<br>19:56<br>20:58 | 04:30<br>21:54<br>21:54 |
| 5                   | 08:47<br>15:50<br>68 | 12:24 (11)<br>14:38 (10)<br>16:50<br>38 | 14:09 (10)<br>17:53<br>19:58 | 06:58<br>17:53<br>19:58 | 06:36<br>19:58<br>21:00 | 04:29<br>21:55<br>21:55 |
| 6                   | 08:46<br>15:54<br>69 | 12:24 (11)<br>14:39 (10)<br>16:53<br>36 | 14:11 (10)<br>17:55<br>20:00 | 06:56<br>17:55<br>20:00 | 06:33<br>20:00<br>21:02 | 04:28<br>21:56<br>21:56 |
| 7                   | 08:46<br>15:53<br>67 | 12:25 (11)<br>14:39 (10)<br>16:55<br>34 | 14:11 (10)<br>17:57<br>20:02 | 06:53<br>17:57<br>20:02 | 06:31<br>20:02<br>21:04 | 04:27<br>21:57<br>21:57 |
| 8                   | 08:45<br>15:54<br>67 | 12:26 (11)<br>14:40 (10)<br>16:57<br>31 | 14:13 (10)<br>17:59<br>20:04 | 06:51<br>17:59<br>20:04 | 06:28<br>20:04<br>21:06 | 04:26<br>21:58<br>21:58 |
| 9                   | 08:44<br>15:56<br>67 | 12:27 (11)<br>14:41 (10)<br>16:59<br>27 | 14:15 (10)<br>18:01<br>20:06 | 06:48<br>18:01<br>20:06 | 06:25<br>20:06<br>21:08 | 04:26<br>21:59<br>21:59 |
| 10                  | 08:44<br>15:57<br>67 | 12:28 (11)<br>14:42 (10)<br>17:02<br>23 | 14:17 (10)<br>18:03<br>20:08 | 06:45<br>18:03<br>20:08 | 06:23<br>20:08<br>21:10 | 04:25<br>22:00<br>22:00 |
| 11                  | 08:43<br>15:59<br>64 | 12:30 (11)<br>14:42 (10)<br>17:04<br>16 | 14:21 (10)<br>18:05<br>20:10 | 06:43<br>18:05<br>20:10 | 06:20<br>20:10<br>21:12 | 04:24<br>22:01<br>22:01 |
| 12                  | 08:42<br>16:01<br>63 | 12:32 (11)<br>14:43 (10)<br>17:06<br>1  | 14:29 (10)<br>18:08<br>20:12 | 06:40<br>18:08<br>20:12 | 06:17<br>20:12<br>21:14 | 04:24<br>22:02<br>22:02 |
| 13                  | 08:41<br>16:03<br>61 | 12:33 (11)<br>14:44 (10)<br>17:08<br>1  | 14:30 (10)<br>18:10<br>20:15 | 06:37<br>18:10<br>20:15 | 06:15<br>20:15<br>21:16 | 04:23<br>22:03<br>22:03 |
| 14                  | 08:40<br>16:04<br>58 | 12:35 (11)<br>14:44 (10)<br>17:11<br>1  | 18:12<br>20:17<br>21:18      | 06:35<br>20:17<br>21:18 | 06:12<br>21:18<br>22:04 | 04:23<br>22:04<br>22:04 |
| 15                  | 08:39<br>16:06<br>53 | 12:38 (11)<br>14:45 (10)<br>17:13<br>1  | 18:12<br>20:19<br>21:20      | 06:32<br>20:19<br>21:20 | 06:10<br>21:20<br>22:05 | 04:23<br>22:05<br>22:05 |
| 16                  | 08:38<br>16:08<br>45 | 14:00 (10)<br>14:45 (10)<br>17:15<br>1  | 18:14<br>20:21<br>21:22      | 06:29<br>20:21<br>21:22 | 06:07<br>21:22<br>22:05 | 04:22<br>22:05<br>22:05 |
| 17                  | 08:36<br>16:10<br>46 | 14:01 (10)<br>14:47 (10)<br>17:17<br>1  | 18:16<br>20:23<br>21:24      | 06:27<br>20:23<br>21:24 | 06:05<br>21:24<br>22:06 | 04:22<br>22:06<br>22:06 |
| 18                  | 08:35<br>16:12<br>47 | 14:00 (10)<br>14:47 (10)<br>17:20<br>1  | 18:18<br>20:25<br>21:26      | 06:24<br>20:25<br>21:26 | 06:02<br>21:26<br>22:06 | 04:22<br>22:06<br>22:06 |
| 19                  | 08:34<br>16:14<br>47 | 14:01 (10)<br>14:48 (10)<br>17:22<br>1  | 18:20<br>20:27<br>21:28      | 06:21<br>20:27<br>21:28 | 06:00<br>21:28<br>22:07 | 04:22<br>22:07<br>22:07 |
| 20                  | 08:32<br>16:16<br>47 | 14:01 (10)<br>14:48 (10)<br>17:24<br>1  | 18:22<br>20:29<br>21:30      | 06:19<br>20:29<br>21:30 | 05:57<br>21:30<br>22:07 | 04:22<br>22:07<br>22:07 |
| 21                  | 08:31<br>16:18<br>47 | 14:01 (10)<br>14:48 (10)<br>17:26<br>1  | 18:24<br>20:31<br>21:32      | 06:16<br>20:31<br>21:32 | 05:54<br>21:32<br>22:07 | 04:22<br>22:07<br>22:07 |
| 22                  | 08:30<br>16:20<br>47 | 14:02 (10)<br>14:49 (10)<br>17:29<br>1  | 18:27<br>20:33<br>21:33      | 06:13<br>20:33<br>21:33 | 05:52<br>21:33<br>22:08 | 04:22<br>22:08<br>22:08 |
| 23                  | 08:28<br>16:22<br>47 | 14:02 (10)<br>14:49 (10)<br>17:31<br>1  | 18:29<br>20:35<br>21:35      | 06:11<br>20:35<br>21:35 | 05:49<br>21:35<br>22:08 | 04:23<br>22:08<br>22:08 |
| 24                  | 08:27<br>16:24<br>47 | 14:02 (10)<br>14:49 (10)<br>17:33<br>1  | 18:31<br>20:37<br>21:37      | 06:08<br>20:37<br>21:37 | 05:47<br>21:37<br>22:08 | 04:23<br>22:08<br>22:08 |
| 25                  | 08:25<br>16:26<br>48 | 14:02 (10)<br>14:50 (10)<br>17:35<br>1  | 18:33<br>20:39<br>21:39      | 06:05<br>20:39<br>21:39 | 05:45<br>21:39<br>22:08 | 04:23<br>22:08<br>22:08 |
| 26                  | 08:23<br>16:28<br>48 | 14:02 (10)<br>14:50 (10)<br>17:37<br>1  | 18:35<br>20:41<br>21:40      | 06:03<br>20:41<br>21:40 | 05:42<br>21:40<br>22:08 | 04:24<br>22:08<br>22:08 |
| 27                  | 08:22<br>16:31<br>47 | 14:03 (10)<br>14:50 (10)<br>17:40<br>1  | 18:37<br>20:43<br>21:42      | 06:00<br>20:43<br>21:42 | 05:40<br>21:42<br>22:08 | 04:24<br>22:08<br>22:08 |
| 28                  | 08:20<br>16:33<br>47 | 14:03 (10)<br>14:50 (10)<br>17:42<br>1  | 18:39<br>20:45<br>21:43      | 05:57<br>20:45<br>21:43 | 05:37<br>21:43<br>22:07 | 04:25<br>22:07<br>22:07 |
| 29                  | 08:18<br>16:35<br>46 | 14:04 (10)<br>14:50 (10)<br>17:44<br>1  | 18:41<br>20:47<br>21:45      | 05:55<br>20:47<br>21:45 | 05:35<br>21:45<br>22:07 | 04:25<br>22:07<br>22:07 |
| 30                  | 08:16<br>16:37<br>46 | 14:04 (10)<br>14:50 (10)<br>17:46<br>1  | 18:43<br>20:49<br>21:47      | 05:52<br>20:49<br>21:47 | 05:33<br>21:47<br>22:07 | 04:26<br>22:07<br>22:07 |
| 31                  | 08:14<br>16:39<br>45 | 14:05 (10)<br>14:50 (10)<br>17:48<br>1  | 18:45<br>20:51<br>21:48      | 05:50<br>20:51<br>21:48 | 05:31<br>21:48<br>22:07 | 04:26<br>22:07<br>22:07 |
| Potential sun hours | 235                  | 265                                     | 365                          | 425                     | 507                     | 529                     |
| Total, worst case   | 1725                 | 373                                     |                              |                         |                         |                         |
| Sun reduction       | 0,15                 | 0,24                                    |                              |                         |                         |                         |
| Oper. time red.     | 0,94                 | 0,94                                    |                              |                         |                         |                         |
| Wind dir. red.      | 0,66                 | 0,67                                    |                              |                         |                         |                         |
| Total reduction     | 0,10                 | 0,15                                    |                              |                         |                         |                         |
| Total, real         | 166                  | 56                                      |                              |                         |                         |                         |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: C - Uplejas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September      | October        | November                 | December                 |
|---------------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|
| 1                   | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34           | 13:48 (10)<br>14:09 (10) |
| 2                   | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31           | 13:45 (10)<br>14:11 (10) |
| 3                   | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29           | 13:44 (10)<br>14:13 (10) |
| 4                   | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27           | 13:42 (10)<br>14:14 (10) |
| 5                   | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25           | 13:41 (10)<br>14:16 (10) |
| 6                   | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23           | 13:40 (10)<br>14:17 (10) |
| 7                   | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21           | 13:38 (10)<br>14:17 (10) |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19           | 13:38 (10)<br>14:19 (10) |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17           | 13:37 (10)<br>14:19 (10) |
| 10                  | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15           | 13:37 (10)<br>14:20 (10) |
| 11                  | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13           | 13:36 (10)<br>14:21 (10) |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11           | 13:36 (10)<br>14:21 (10) |
| 13                  | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09           | 13:36 (10)<br>14:22 (10) |
| 14                  | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07           | 13:35 (10)<br>14:22 (10) |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05           | 13:36 (10)<br>14:23 (10) |
| 16                  | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03           | 13:36 (10)<br>14:23 (10) |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02           | 13:35 (10)<br>14:23 (10) |
| 18                  | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00           | 13:36 (10)<br>14:24 (10) |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58           | 13:36 (10)<br>14:24 (10) |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57           | 13:36 (10)<br>14:23 (10) |
| 21                  | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55           | 13:37 (10)<br>14:24 (10) |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54           | 13:37 (10)<br>14:24 (10) |
| 23                  | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52           | 13:37 (10)<br>14:24 (10) |
| 24                  | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51           | 13:37 (10)<br>14:24 (10) |
| 25                  | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49           | 13:39 (10)<br>14:25 (10) |
| 26                  | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48           | 13:39 (10)<br>14:25 (10) |
| 27                  | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47           | 12:21 (11)<br>14:25 (10) |
| 28                  | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:45           | 12:16 (11)<br>14:25 (10) |
| 29                  | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44           | 12:15 (11)<br>14:25 (10) |
| 30                  | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43           | 12:13 (11)<br>14:25 (10) |
| 31                  | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 | 13:52 (10)<br>14:05 (10) | 08:48<br>15:43           |
| Potential sun hours | 530            | 470            | 385            | 324            | 248                      | 216                      |
| Total, worst case   |                |                |                | 13             | 1320                     | 2086                     |
| Sun reduction       |                |                |                | 0,27           | 0,09                     | 0,09                     |
| Oper. time red.     |                |                |                | 0,94           | 0,94                     | 0,94                     |
| Wind dir. red.      |                |                |                | 0,67           | 0,67                     | 0,66                     |
| Total reduction     |                |                |                | 0,17           | 0,06                     | 0,05                     |
| Total, real         |                |                |                | 2              | 76                       | 111                      |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: D - Druku Vecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:53 | 07:01<br>17:55 | 06:39<br>20:00 | 05:23<br>21:03 | 04:30<br>21:56 | 04:29<br>22:04 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:07 | 04:26<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:15<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: E - Kaijas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:18  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:35    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:11 | 22:01 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:06 | 20:10 | 21:13 | 22:02 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:01   | 17:06    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:08 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:29    | 18:29 | 20:33 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 19:00     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:15   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: F - Cvetkovi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:18  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:35    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:25 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:11 | 22:01 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:13 | 22:02 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:38    |
|                     | 16:01   | 17:06    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:50 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:56    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:23 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:47   | 15:48    | 15:38    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:39 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 19:00     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:15   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: G - Balo ži

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:22<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:53 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:53 | 07:01<br>17:55 | 06:39<br>20:00 | 05:23<br>21:03 | 04:30<br>21:56 | 04:29<br>22:04 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:07 | 04:26<br>21:59 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:34 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:36 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:15<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: H - Berzi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February   | March      | April      | May        | June       |
|---------------------|---------|------------|------------|------------|------------|------------|
| 1                   | 08:48   | 13:26 (15) | 08:13      | 08:51 (10) | 07:09      | 06:47      |
|                     | 15:45   | 12         | 13:38 (15) | 16:42      | 23         | 09:14 (10) |
| 2                   | 08:48   | 13:27 (15) | 08:11      | 08:51 (10) | 07:06      | 06:44      |
|                     | 15:46   | 11         | 13:38 (15) | 16:44      | 23         | 09:14 (10) |
| 3                   | 08:48   | 13:29 (15) | 08:09      | 08:51 (10) | 07:04      | 06:41      |
|                     | 15:47   | 8          | 13:37 (15) | 16:46      | 24         | 09:15 (10) |
| 4                   | 08:47   | 13:32 (15) | 08:07      | 08:51 (10) | 07:01      | 06:39      |
|                     | 15:49   | 4          | 13:36 (15) | 16:48      | 23         | 09:14 (10) |
| 5                   | 08:47   |            | 08:05      | 08:52 (10) | 06:59      | 06:36      |
|                     | 15:50   |            | 16:51      | 22         | 09:14 (10) | 17:53      |
| 6                   | 08:46   |            | 08:03      | 08:52 (10) | 06:56      | 06:33      |
|                     | 15:51   |            | 16:53      | 22         | 09:14 (10) | 17:55      |
| 7                   | 08:46   |            | 08:01      | 08:54 (10) | 06:53      | 06:31      |
|                     | 15:53   |            | 16:55      | 19         | 09:13 (10) | 17:57      |
| 8                   | 08:45   |            | 07:58      | 08:54 (10) | 06:51      | 06:28      |
|                     | 15:54   |            | 16:57      | 18         | 09:12 (10) | 17:59      |
| 9                   | 08:44   |            | 07:56      | 08:56 (10) | 06:48      | 06:25      |
|                     | 15:56   |            | 17:00      | 15         | 09:11 (10) | 18:01      |
| 10                  | 08:44   |            | 07:54      | 08:58 (10) | 06:45      | 06:23      |
|                     | 15:58   |            | 17:02      | 11         | 09:09 (10) | 18:03      |
| 11                  | 08:43   |            | 07:52      | 09:01 (10) | 06:43      | 06:20      |
|                     | 15:59   |            | 17:04      | 4          | 09:05 (10) | 18:06      |
| 12                  | 08:42   |            | 07:50      |            | 06:40      | 06:18      |
|                     | 16:01   |            | 17:06      |            | 18:08      | 20:13      |
| 13                  | 08:41   |            | 07:47      |            | 06:38      | 06:15      |
|                     | 16:03   |            | 17:09      |            | 18:10      | 20:15      |
| 14                  | 08:40   |            | 07:45      |            | 06:35      | 06:12      |
|                     | 16:05   |            | 17:11      |            | 18:12      | 20:17      |
| 15                  | 08:39   |            | 07:43      |            | 06:32      | 06:10      |
|                     | 16:06   |            | 17:13      |            | 18:14      | 20:19      |
| 16                  | 08:38   |            | 07:41      |            | 06:30      | 06:07      |
|                     | 16:08   |            | 17:15      |            | 18:16      | 20:21      |
| 17                  | 08:37   |            | 07:38      |            | 06:27      | 06:05      |
|                     | 16:10   |            | 17:18      |            | 18:18      | 20:23      |
| 18                  | 08:35   |            | 07:36      |            | 06:24      | 06:02      |
|                     | 16:12   |            | 17:20      |            | 18:20      | 20:25      |
| 19                  | 08:34   |            | 07:33      |            | 06:22      | 06:00      |
|                     | 16:14   |            | 17:22      |            | 18:23      | 20:27      |
| 20                  | 08:33   |            | 07:31      |            | 06:19      | 05:57      |
|                     | 16:16   |            | 17:24      |            | 18:25      | 20:29      |
| 21                  | 08:31   |            | 07:29      |            | 06:16      | 05:55      |
|                     | 16:18   |            | 17:26      |            | 18:27      | 20:31      |
| 22                  | 08:30   |            | 07:26      |            | 06:14      | 05:52      |
|                     | 16:20   |            | 17:29      |            | 18:29      | 20:33      |
| 23                  | 08:28   |            | 07:24      |            | 06:11      | 05:50      |
|                     | 16:22   |            | 17:31      |            | 18:31      | 20:36      |
| 24                  | 08:27   | 09:02 (10) | 07:21      |            | 06:08      | 05:47      |
|                     | 16:24   | 5          | 09:07 (10) | 17:33      | 18:33      | 20:38      |
| 25                  | 08:25   | 09:00 (10) | 07:19      |            | 06:05      | 05:45      |
|                     | 16:26   | 8          | 09:08 (10) | 17:35      | 18:35      | 20:40      |
| 26                  | 08:23   | 08:58 (10) | 07:16      |            | 06:03      | 05:42      |
|                     | 16:29   | 11         | 09:09 (10) | 17:37      | 18:37      | 20:42      |
| 27                  | 08:22   | 08:56 (10) | 07:14      |            | 06:00      | 05:40      |
|                     | 16:31   | 15         | 09:11 (10) | 17:40      | 18:39      | 20:44      |
| 28                  | 08:20   | 08:54 (10) | 07:11      |            | 05:57      | 05:37      |
|                     | 16:33   | 17         | 09:11 (10) | 17:42      | 18:41      | 20:46      |
| 29                  | 08:18   | 08:52 (10) |            |            | 05:55      | 05:35      |
|                     | 16:35   | 20         | 09:12 (10) |            | 18:43      | 20:48      |
| 30                  | 08:16   | 08:51 (10) |            |            | 06:52      | 05:33      |
|                     | 16:37   | 22         | 09:13 (10) |            | 19:46      | 20:50      |
| 31                  | 08:15   | 08:51 (10) |            |            | 06:49      | 04:34      |
|                     | 16:39   | 22         | 09:13 (10) |            | 19:48      | 21:48      |
| Potential sun hours | 235     |            | 265        |            | 365        | 425        |
| Total, worst case   |         | 155        |            | 204        |            | 507        |
| Sun reduction       |         | 0,15       |            | 0,24       |            |            |
| Oper. time red.     |         | 0,94       |            | 0,94       |            |            |
| Wind dir. red.      |         | 0,60       |            | 0,59       |            |            |
| Total reduction     |         | 0,09       |            | 0,13       |            |            |
| Total, real         |         | 13         |            | 27         |            |            |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: H - Berzi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September | October | November | December              |
|---------------------|-------|--------|-----------|---------|----------|-----------------------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:28 (10)   08:21    |
|                     | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 9 08:37 (10)   15:42  |
| 2                   | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:25 (10)   08:23    |
|                     | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 14 08:39 (10)   15:41 |
| 3                   | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24 (10)   08:25    |
|                     | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 17 08:41 (10)   15:40 |
| 4                   | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:23 (10)   08:26    |
|                     | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 19 08:42 (10)   15:40 |
| 5                   | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:23 (10)   08:28    |
|                     | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 20 08:43 (10)   15:39 |
| 6                   | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:22 (10)   08:29    |
|                     | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 22 08:44 (10)   15:38 |
| 7                   | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:22 (10)   08:31    |
|                     | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 23 08:45 (10)   15:37 |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28   | 07:35    | 08:21 (10)   08:32    |
|                     | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 24 08:45 (10)   15:37 |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:21 (10)   08:34    |
|                     | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 23 08:44 (10)   15:36 |
| 10                  | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:22 (10)   08:35    |
|                     | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 23 08:45 (10)   15:36 |
| 11                  | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:22 (10)   08:36    |
|                     | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 23 08:45 (10)   15:36 |
| 12                  | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:23 (10)   08:38    |
|                     | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 22 08:45 (10)   15:35 |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:23 (10)   08:39    |
|                     | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 22 08:45 (10)   15:35 |
| 14                  | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:25 (10)   08:40    |
|                     | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 19 08:44 (10)   15:35 |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:28 (10)   08:41    |
|                     | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 16 08:44 (10)   15:35 |
| 16                  | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:30 (10)   08:42    |
|                     | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 13 08:43 (10)   15:35 |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:33 (10)   08:43    |
|                     | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 10 08:43 (10)   15:35 |
| 18                  | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:35 (10)   08:44    |
|                     | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 7 08:42 (10)   15:35  |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:37 (10)   08:44    |
|                     | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 3 08:40 (10)   15:35  |
| 20                  | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45                 |
|                     | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 34 13:36 (15)         |
| 21                  | 04:52 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46                 |
|                     | 21:46 | 20:40  | 19:19     | 18:00   | 15:55    | 34 13:37 (15)         |
| 22                  | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46                 |
|                     | 21:44 | 20:38  | 19:16     | 17:57   | 15:54    | 35 13:37 (15)         |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47                 |
|                     | 21:43 | 20:35  | 19:13     | 17:55   | 15:52    | 34 13:38 (15)         |
| 24                  | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47                 |
|                     | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 34 13:38 (15)         |
| 25                  | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48                 |
|                     | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 33 13:38 (15)         |
| 26                  | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48                 |
|                     | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 32 13:38 (15)         |
| 27                  | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48                 |
|                     | 21:36 | 20:25  | 19:02     | 16:45   | 15:47    | 30 13:38 (15)         |
| 28                  | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48                 |
|                     | 21:34 | 20:22  | 19:00     | 16:43   | 15:46    | 30 13:38 (15)         |
| 29                  | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48                 |
|                     | 21:32 | 20:20  | 18:57     | 16:41   | 15:44    | 28 13:39 (15)         |
| 30                  | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48                 |
|                     | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 26 13:39 (15)         |
| 31                  | 05:10 | 06:12  |           | 07:17   |          | 08:48                 |
|                     | 21:28 | 20:15  |           | 16:36   |          | 22 13:39 (15)         |
| Potential sun hours | 530   | 470    | 385       | 324     | 248      | 216                   |
| Total, worst case   |       |        |           |         | 329      | 615                   |
| Sun reduction       |       |        |           |         | 0,09     | 0,09                  |
| Oper. time red.     |       |        |           |         | 0,94     | 0,94                  |
| Wind dir. red.      |       |        |           |         | 0,59     | 0,64                  |
| Total reduction     |       |        |           |         | 0,05     | 0,05                  |
| Total, real         |       |        |           |         | 17       | 32                    |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: I - Kropini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |               | February |               | March | April | May   | June  |
|---------------------|---------|---------------|----------|---------------|-------|-------|-------|-------|
| 1                   | 08:48   | 09:50 (11)    | 08:13    | 10:35 (10)    | 07:09 | 06:47 | 05:30 | 04:33 |
|                     | 15:45   | 86 14:16 (6)  | 16:42    | 71 16:09 (15) | 17:44 | 19:50 | 20:52 | 21:50 |
| 2                   | 08:48   | 09:51 (11)    | 08:11    | 10:37 (10)    | 07:06 | 06:44 | 05:28 | 04:32 |
|                     | 15:46   | 86 14:17 (6)  | 16:44    | 68 16:12 (15) | 17:46 | 19:52 | 20:54 | 21:51 |
| 3                   | 08:48   | 09:51 (11)    | 08:09    | 10:41 (10)    | 07:04 | 06:41 | 05:26 | 04:31 |
|                     | 15:47   | 85 14:16 (6)  | 16:46    | 61 16:13 (15) | 17:48 | 19:54 | 20:56 | 21:52 |
| 4                   | 08:47   | 09:52 (11)    | 08:07    | 15:10 (8)     | 07:01 | 06:39 | 05:23 | 04:30 |
|                     | 15:49   | 84 14:17 (6)  | 16:48    | 47 16:13 (15) | 17:51 | 19:56 | 20:58 | 21:54 |
| 5                   | 08:47   | 09:52 (11)    | 08:05    | 15:11 (8)     | 06:58 | 06:36 | 05:21 | 04:29 |
|                     | 15:50   | 83 14:16 (6)  | 16:51    | 45 16:13 (15) | 17:53 | 19:58 | 21:00 | 21:55 |
| 6                   | 08:46   | 09:53 (11)    | 08:03    | 15:13 (8)     | 06:56 | 06:33 | 05:19 | 04:28 |
|                     | 15:51   | 81 14:16 (6)  | 16:53    | 42 16:13 (15) | 17:55 | 20:00 | 21:02 | 21:56 |
| 7                   | 08:46   | 09:53 (11)    | 08:01    | 15:16 (8)     | 06:53 | 06:31 | 05:17 | 04:27 |
|                     | 15:53   | 79 14:15 (6)  | 16:55    | 37 16:14 (15) | 17:57 | 20:02 | 21:04 | 21:57 |
| 8                   | 08:45   | 09:53 (11)    | 07:58    | 15:18 (8)     | 06:51 | 06:28 | 05:14 | 04:26 |
|                     | 15:54   | 79 14:15 (6)  | 16:57    | 30 16:13 (15) | 17:59 | 20:04 | 21:07 | 21:58 |
| 9                   | 08:44   | 09:54 (11)    | 07:56    | 15:52 (15)    | 06:48 | 06:25 | 05:12 | 04:26 |
|                     | 15:56   | 81 15:17 (8)  | 16:59    | 20 16:12 (15) | 18:01 | 20:06 | 21:09 | 21:59 |
| 10                  | 08:44   | 09:54 (11)    | 07:54    | 15:52 (15)    | 06:45 | 06:23 | 05:10 | 04:25 |
|                     | 15:58   | 78 15:19 (8)  | 17:02    | 19 16:11 (15) | 18:03 | 20:08 | 21:11 | 22:00 |
| 11                  | 08:43   | 09:55 (11)    | 07:52    | 15:53 (15)    | 06:43 | 06:20 | 05:08 | 04:24 |
|                     | 15:59   | 80 15:21 (8)  | 17:04    | 18 16:11 (15) | 18:06 | 20:10 | 21:13 | 22:01 |
| 12                  | 08:42   | 09:56 (11)    | 07:50    | 15:55 (15)    | 06:40 | 06:18 | 05:06 | 04:24 |
|                     | 16:01   | 83 15:23 (8)  | 17:06    | 14 16:09 (15) | 18:08 | 20:13 | 21:15 | 22:02 |
| 13                  | 08:41   | 09:57 (11)    | 07:47    | 15:57 (15)    | 06:37 | 06:15 | 05:04 | 04:23 |
|                     | 16:03   | 85 15:25 (8)  | 17:08    | 10 16:07 (15) | 18:10 | 20:15 | 21:16 | 22:03 |
| 14                  | 08:40   | 09:57 (11)    | 07:45    |               | 06:35 | 06:12 | 05:02 | 04:23 |
|                     | 16:04   | 86 15:26 (8)  | 17:11    |               | 18:12 | 20:17 | 21:18 | 22:04 |
| 15                  | 08:39   | 09:58 (11)    | 07:43    |               | 06:32 | 06:10 | 05:00 | 04:23 |
|                     | 16:06   | 88 15:28 (8)  | 17:13    |               | 18:14 | 20:19 | 21:20 | 22:05 |
| 16                  | 08:38   | 09:58 (11)    | 07:41    |               | 06:29 | 06:07 | 04:58 | 04:22 |
|                     | 16:08   | 90 15:29 (8)  | 17:15    |               | 18:16 | 20:21 | 21:22 | 22:05 |
| 17                  | 08:36   | 09:59 (11)    | 07:38    |               | 06:27 | 06:05 | 04:56 | 04:22 |
|                     | 16:10   | 91 15:30 (8)  | 17:17    |               | 18:18 | 20:23 | 21:24 | 22:06 |
| 18                  | 08:35   | 09:59 (11)    | 07:36    |               | 06:24 | 06:02 | 04:54 | 04:22 |
|                     | 16:12   | 92 15:31 (8)  | 17:20    |               | 18:20 | 20:25 | 21:26 | 22:06 |
| 19                  | 08:34   | 10:01 (11)    | 07:33    |               | 06:21 | 06:00 | 04:53 | 04:22 |
|                     | 16:14   | 91 15:32 (8)  | 17:22    |               | 18:22 | 20:27 | 21:28 | 22:07 |
| 20                  | 08:33   | 10:02 (11)    | 07:31    |               | 06:19 | 05:57 | 04:51 | 04:22 |
|                     | 16:16   | 91 15:32 (8)  | 17:24    |               | 18:25 | 20:29 | 21:30 | 22:07 |
| 21                  | 08:31   | 10:03 (11)    | 07:29    |               | 06:16 | 05:54 | 04:49 | 04:22 |
|                     | 16:18   | 91 15:33 (8)  | 17:26    |               | 18:27 | 20:31 | 21:32 | 22:07 |
| 22                  | 08:30   | 10:05 (11)    | 07:26    |               | 06:13 | 05:52 | 04:47 | 04:22 |
|                     | 16:20   | 88 15:34 (8)  | 17:29    |               | 18:29 | 20:33 | 21:33 | 22:08 |
| 23                  | 08:28   | 10:06 (11)    | 07:24    |               | 06:11 | 05:49 | 04:46 | 04:23 |
|                     | 16:22   | 88 15:35 (8)  | 17:31    |               | 18:31 | 20:35 | 21:35 | 22:08 |
| 24                  | 08:27   | 10:09 (11)    | 07:21    |               | 06:08 | 05:47 | 04:44 | 04:23 |
|                     | 16:24   | 82 15:35 (8)  | 17:33    |               | 18:33 | 20:38 | 21:37 | 22:08 |
| 25                  | 08:25   | 10:14 (11)    | 07:19    |               | 06:05 | 05:45 | 04:43 | 04:23 |
|                     | 16:26   | 70 15:35 (8)  | 17:35    |               | 18:35 | 20:40 | 21:39 | 22:08 |
| 26                  | 08:23   | 10:26 (10)    | 07:16    |               | 06:03 | 05:42 | 04:41 | 04:24 |
|                     | 16:28   | 69 15:35 (8)  | 17:37    |               | 18:37 | 20:42 | 21:40 | 22:08 |
| 27                  | 08:22   | 10:27 (10)    | 07:14    |               | 06:00 | 05:40 | 04:40 | 04:24 |
|                     | 16:31   | 69 15:57 (15) | 17:40    |               | 18:39 | 20:44 | 21:42 | 22:08 |
| 28                  | 08:20   | 10:28 (10)    | 07:11    |               | 05:57 | 05:37 | 04:38 | 04:25 |
|                     | 16:33   | 71 15:59 (15) | 17:42    |               | 18:41 | 20:46 | 21:44 | 22:08 |
| 29                  | 08:18   | 10:30 (10)    |          |               | 05:55 | 05:35 | 04:37 | 04:25 |
|                     | 16:35   | 73 16:02 (15) |          |               | 18:43 | 20:48 | 21:45 | 22:07 |
| 30                  | 08:16   | 10:31 (10)    |          |               | 06:52 | 05:33 | 04:36 | 04:26 |
|                     | 16:37   | 73 16:04 (15) |          |               | 19:45 | 20:50 | 21:47 | 22:07 |
| 31                  | 08:14   | 10:33 (10)    |          |               | 06:49 |       | 04:34 |       |
|                     | 16:39   | 73 16:07 (15) |          |               | 19:48 |       | 21:48 |       |
| Potential sun hours | 235     |               | 265      |               | 365   | 425   | 507   | 529   |
| Total, worst case   | 2546    |               | 482      |               |       |       |       |       |
| Sun reduction       | 0,15    |               | 0,24     |               |       |       |       |       |
| Oper. time red.     | 0,94    |               | 0,94     |               |       |       |       |       |
| Wind dir. red.      | 0,62    |               | 0,66     |               |       |       |       |       |
| Total reduction     | 0,09    |               | 0,15     |               |       |       |       |       |
| Total, real         | 230     |               | 72       |               |       |       |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: I - Kropini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September      | October        | November       | December                 |
|---------------------|----------------|----------------|----------------|----------------|----------------|--------------------------|
| 1                   | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 15:22 (15)<br>15:41 (15) |
| 2                   | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 15:21 (15)<br>15:41 (15) |
| 3                   | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 15:21 (15)<br>15:42 (15) |
| 4                   | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 14:46 (8)<br>15:43 (15)  |
| 5                   | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 14:44 (8)<br>15:43 (15)  |
| 6                   | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 14:42 (8)<br>15:43 (15)  |
| 7                   | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 14:40 (8)<br>15:43 (15)  |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 10:14 (10)<br>15:43 (15) |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 10:09 (10)<br>15:43 (15) |
| 10                  | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 10:07 (10)<br>15:42 (15) |
| 11                  | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 10:05 (10)<br>15:39 (15) |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 10:03 (10)<br>15:37 (15) |
| 13                  | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 10:02 (10)<br>15:35 (15) |
| 14                  | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 10:01 (10)<br>15:33 (15) |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 10:01 (10)<br>15:31 (15) |
| 16                  | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 10:00 (10)<br>15:09 (8)  |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 09:59 (10)<br>15:08 (8)  |
| 18                  | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 09:45 (11)<br>15:09 (8)  |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 09:42 (11)<br>15:09 (8)  |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 09:40 (11)<br>15:09 (8)  |
| 21                  | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 09:39 (11)<br>15:09 (8)  |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:54 | 09:38 (11)<br>15:09 (8)  |
| 23                  | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 09:38 (11)<br>15:08 (8)  |
| 24                  | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 09:37 (11)<br>15:08 (8)  |
| 25                  | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 09:37 (11)<br>15:09 (8)  |
| 26                  | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 09:37 (11)<br>15:08 (8)  |
| 27                  | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 09:37 (11)<br>15:08 (8)  |
| 28                  | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 09:37 (11)<br>15:07 (8)  |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:44 | 09:37 (11)<br>15:07 (8)  |
| 30                  | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 09:37 (11)<br>15:05 (8)  |
| 31                  | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43           |
| Potential sun hours | 530            | 470            | 385            | 324            | 248            | 216                      |
| Total, worst case   |                |                |                | 35             | 2054           | 2651                     |
| Sun reduction       |                |                |                | 0,27           | 0,09           | 0,09                     |
| Oper. time red.     |                |                |                | 0,94           | 0,94           | 0,94                     |
| Wind dir. red.      |                |                |                | 0,67           | 0,63           | 0,62                     |
| Total reduction     |                |                |                | 0,17           | 0,05           | 0,05                     |
| Total, real         |                |                |                | 6              | 113            | 133                      |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: J - Ergli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February           | March              | April | May   | June  |
|---------------------|---------|--------------------|--------------------|-------|-------|-------|
| 1                   | 08:48   | 10:04 (9)   08:13  | 08:46 (11)   07:09 | 06:47 | 05:30 | 04:33 |
|                     | 15:45   | 14:44 (7)   16:42  | 15:40 (15)   17:44 | 19:50 | 20:52 | 21:50 |
| 2                   | 08:48   | 10:05 (9)   08:11  | 08:46 (11)   07:06 | 06:44 | 05:28 | 04:32 |
|                     | 15:46   | 14:45 (7)   16:44  | 15:40 (15)   17:46 | 19:52 | 20:54 | 21:51 |
| 3                   | 08:48   | 10:06 (9)   08:09  | 08:46 (10)   07:04 | 06:41 | 05:26 | 04:31 |
|                     | 15:47   | 14:45 (7)   16:46  | 15:40 (15)   17:48 | 19:54 | 20:56 | 21:52 |
| 4                   | 08:47   | 10:07 (9)   08:07  | 08:43 (10)   07:01 | 06:39 | 05:23 | 04:30 |
|                     | 15:49   | 14:46 (7)   16:48  | 15:39 (15)   17:51 | 19:56 | 20:58 | 21:54 |
| 5                   | 08:47   | 10:07 (9)   08:05  | 08:42 (10)   06:58 | 06:36 | 05:21 | 04:29 |
|                     | 15:50   | 14:46 (7)   16:51  | 15:39 (15)   17:53 | 19:58 | 21:00 | 21:55 |
| 6                   | 08:46   | 10:07 (9)   08:03  | 08:41 (10)   06:56 | 06:33 | 05:19 | 04:28 |
|                     | 15:51   | 14:46 (7)   16:53  | 15:38 (15)   17:55 | 20:00 | 21:02 | 21:56 |
| 7                   | 08:46   | 10:08 (9)   08:01  | 08:40 (10)   06:53 | 06:31 | 05:17 | 04:27 |
|                     | 15:53   | 14:46 (7)   16:55  | 15:38 (15)   17:57 | 20:02 | 21:05 | 21:57 |
| 8                   | 08:45   | 10:08 (9)   07:58  | 08:38 (10)   06:51 | 06:28 | 05:15 | 04:26 |
|                     | 15:54   | 14:46 (7)   16:57  | 15:36 (15)   17:59 | 20:04 | 21:07 | 21:58 |
| 9                   | 08:44   | 10:09 (9)   07:56  | 08:38 (10)   06:48 | 06:25 | 05:12 | 04:26 |
|                     | 15:56   | 14:46 (7)   17:00  | 15:35 (15)   18:01 | 20:06 | 21:09 | 22:00 |
| 10                  | 08:44   | 10:10 (9)   07:54  | 08:38 (10)   06:45 | 06:23 | 05:10 | 04:25 |
|                     | 15:58   | 14:46 (7)   17:02  | 15:33 (15)   18:03 | 20:08 | 21:11 | 22:01 |
| 11                  | 08:43   | 10:11 (9)   07:52  | 08:36 (10)   06:43 | 06:20 | 05:08 | 04:24 |
|                     | 15:59   | 14:47 (7)   17:04  | 15:29 (15)   18:06 | 20:10 | 21:13 | 22:01 |
| 12                  | 08:42   | 10:12 (9)   07:50  | 08:36 (10)   06:40 | 06:18 | 05:06 | 04:24 |
|                     | 16:01   | 15:22 (15)   17:06 | 09:10 (10)   18:08 | 20:13 | 21:15 | 22:02 |
| 13                  | 08:41   | 10:13 (9)   07:47  | 08:36 (10)   06:37 | 06:15 | 05:04 | 04:23 |
|                     | 16:03   | 15:25 (15)   17:09 | 09:10 (10)   18:10 | 20:15 | 21:17 | 22:03 |
| 14                  | 08:40   | 10:13 (9)   07:45  | 08:36 (10)   06:35 | 06:12 | 05:02 | 04:23 |
|                     | 16:05   | 15:26 (15)   17:11 | 09:11 (10)   18:12 | 20:17 | 21:18 | 22:04 |
| 15                  | 08:39   | 10:15 (9)   07:43  | 08:35 (10)   06:32 | 06:10 | 05:00 | 04:23 |
|                     | 16:06   | 15:28 (15)   17:13 | 09:10 (10)   18:14 | 20:19 | 21:20 | 22:05 |
| 16                  | 08:38   | 10:15 (9)   07:41  | 08:36 (10)   06:30 | 06:07 | 04:58 | 04:23 |
|                     | 16:08   | 15:29 (15)   17:15 | 09:11 (10)   18:16 | 20:21 | 21:22 | 22:05 |
| 17                  | 08:36   | 10:17 (9)   07:38  | 08:35 (10)   06:27 | 06:05 | 04:56 | 04:22 |
|                     | 16:10   | 15:31 (15)   17:17 | 09:10 (10)   18:18 | 20:23 | 21:24 | 22:06 |
| 18                  | 08:35   | 10:18 (9)   07:36  | 08:36 (10)   06:24 | 06:02 | 04:54 | 04:22 |
|                     | 16:12   | 15:32 (15)   17:20 | 09:10 (10)   18:20 | 20:25 | 21:26 | 22:06 |
| 19                  | 08:34   | 10:21 (9)   07:33  | 08:36 (10)   06:22 | 06:00 | 04:53 | 04:22 |
|                     | 16:14   | 15:33 (15)   17:22 | 09:09 (10)   18:22 | 20:27 | 21:28 | 22:07 |
| 20                  | 08:33   | 10:24 (9)   07:31  | 08:37 (10)   06:19 | 05:57 | 04:51 | 04:22 |
|                     | 16:16   | 15:34 (15)   17:24 | 09:09 (10)   18:25 | 20:29 | 21:30 | 22:07 |
| 21                  | 08:31   | 13:40 (8)   07:29  | 08:37 (10)   06:16 | 05:55 | 04:49 | 04:22 |
|                     | 16:18   | 15:35 (15)   17:26 | 09:08 (10)   18:27 | 20:31 | 21:32 | 22:07 |
| 22                  | 08:30   | 13:41 (8)   07:26  | 08:38 (10)   06:13 | 05:52 | 04:47 | 04:22 |
|                     | 16:20   | 15:36 (15)   17:29 | 09:07 (10)   18:29 | 20:33 | 21:33 | 22:08 |
| 23                  | 08:28   | 13:41 (8)   07:24  | 08:39 (10)   06:11 | 05:50 | 04:46 | 04:23 |
|                     | 16:22   | 15:37 (15)   17:31 | 09:06 (10)   18:31 | 20:36 | 21:35 | 22:08 |
| 24                  | 08:27   | 13:42 (8)   07:21  | 08:41 (10)   06:08 | 05:47 | 04:44 | 04:23 |
|                     | 16:24   | 15:37 (15)   17:33 | 09:05 (10)   18:33 | 20:38 | 21:37 | 22:08 |
| 25                  | 08:25   | 13:42 (8)   07:19  | 08:42 (10)   06:05 | 05:45 | 04:43 | 04:23 |
|                     | 16:26   | 15:38 (15)   17:35 | 09:02 (10)   18:35 | 20:40 | 21:39 | 22:08 |
| 26                  | 08:23   | 08:58 (11)   07:16 | 08:44 (10)   06:03 | 05:42 | 04:41 | 04:24 |
|                     | 16:29   | 15:38 (15)   17:37 | 08:59 (10)   18:37 | 20:42 | 21:40 | 22:08 |
| 27                  | 08:22   | 08:56 (11)   07:14 | 08:49 (10)   06:00 | 05:40 | 04:40 | 04:24 |
|                     | 16:31   | 15:39 (15)   17:40 | 08:55 (10)   18:39 | 20:44 | 21:42 | 22:08 |
| 28                  | 08:20   | 08:54 (11)   07:11 |                    | 05:57 | 05:37 | 04:38 |
|                     | 16:33   | 15:39 (15)   17:42 |                    | 18:41 | 20:46 | 21:44 |
| 29                  | 08:18   | 08:52 (11)         |                    | 05:55 | 05:35 | 04:37 |
|                     | 16:35   | 15:39 (15)         |                    | 18:43 | 20:48 | 21:45 |
| 30                  | 08:16   | 08:50 (11)         |                    | 06:52 | 05:33 | 04:36 |
|                     | 16:37   | 15:40 (15)         |                    | 19:45 | 20:50 | 21:47 |
| 31                  | 08:14   | 08:48 (11)         |                    | 06:49 |       | 04:34 |
|                     | 16:39   | 15:40 (15)         |                    | 19:48 |       | 21:48 |
| Potential sun hours | 235     | 265                | 365                | 425   | 507   | 529   |
| Total, worst case   | 2832    | 1164               |                    |       |       |       |
| Sun reduction       | 0,15    | 0,24               |                    |       |       |       |
| Oper. time red.     | 0,94    | 0,94               |                    |       |       |       |
| Wind dir. red.      | 0,65    | 0,62               |                    |       |       |       |
| Total reduction     | 0,09    | 0,14               |                    |       |       |       |
| Total, real         | 267     | 163                |                    |       |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: J - Ergli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September      | October        | November       | December                 |
|---------------------|----------------|----------------|----------------|----------------|----------------|--------------------------|
| 1                   | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:06 (10)<br>15:01 (15) |
| 2                   | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:06 (10)<br>15:03 (15) |
| 3                   | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:08 (10)<br>15:05 (15) |
| 4                   | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:08 (10)<br>15:06 (15) |
| 5                   | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:10 (10)<br>15:08 (15) |
| 6                   | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:11 (10)<br>15:08 (15) |
| 7                   | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:12 (10)<br>15:09 (15) |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:35<br>16:19 | 08:15 (10)<br>15:10 (15) |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:16 (11)<br>15:10 (15) |
| 10                  | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:17 (11)<br>15:11 (15) |
| 11                  | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:18 (11)<br>15:11 (15) |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:21 (11)<br>15:12 (15) |
| 13                  | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:23 (11)<br>15:12 (15) |
| 14                  | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:25 (11)<br>15:11 (15) |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:28 (11)<br>15:12 (15) |
| 16                  | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:30 (11)<br>15:12 (15) |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:11 (15)      |
| 18                  | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:12 (15)      |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:11 (15)      |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:11 (15)      |
| 21                  | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:11 (15)      |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:11 (15)      |
| 23                  | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:10 (15)      |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:10 (15)      |
| 25                  | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:10 (15)      |
| 26                  | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 08:06<br>17:48 | 08:12<br>15:48 | 08:48<br>15:09 (15)      |
| 27                  | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 08:08<br>17:45 | 08:14<br>15:47 | 08:48<br>15:08 (15)      |
| 28                  | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 08:10<br>17:43 | 08:16<br>15:46 | 08:48<br>15:07 (15)      |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 08:12<br>17:41 | 08:18<br>15:44 | 08:48<br>15:06 (15)      |
| 30                  | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 08:14<br>17:38 | 08:19<br>15:43 | 08:48<br>15:04 (15)      |
| 31                  | 05:10<br>21:28 | 06:12<br>20:15 |                | 08:16<br>17:36 | 08:20<br>15:43 | 08:48<br>15:43           |
| Potential sun hours | 530            | 470            | 385            | 324            | 248            | 216                      |
| Total, worst case   |                |                |                | 485            | 2375           | 3314                     |
| Sun reduction       |                |                |                | 0,27           | 0,09           | 0,09                     |
| Oper. time red.     |                |                |                | 0,94           | 0,94           | 0,94                     |
| Wind dir. red.      |                |                |                | 0,60           | 0,65           | 0,65                     |
| Total reduction     |                |                |                | 0,15           | 0,06           | 0,05                     |
| Total, real         |                |                |                | 74             | 133            | 173                      |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: K - Nazari

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:41 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:53 | 07:01<br>17:55 | 06:39<br>20:00 | 05:23<br>21:02 | 04:30<br>21:56 | 04:29<br>22:04 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:07 | 04:26<br>21:59 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:17<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:40 | 04:42<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:18<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: L - Akoti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |    | February   |       | March      | April      | May   | June  |
|---------------------|---------|----|------------|-------|------------|------------|-------|-------|
| 1                   | 08:48   |    | 12:21 (11) | 08:13 | 14:18 (10) | 07:09      | 06:47 | 05:30 |
|                     | 15:45   | 71 | 14:39 (9)  | 16:42 | 52         | 15:10 (10) | 17:44 | 20:52 |
| 2                   | 08:48   |    | 12:22 (11) | 08:11 |            | 14:19 (10) | 07:06 | 06:44 |
|                     | 15:46   | 71 | 14:40 (9)  | 16:44 | 52         | 15:11 (10) | 17:46 | 19:52 |
| 3                   | 08:48   |    | 12:22 (11) | 08:09 |            | 14:18 (10) | 07:04 | 06:41 |
|                     | 15:47   | 70 | 14:40 (9)  | 16:46 | 52         | 15:10 (10) | 17:48 | 19:54 |
| 4                   | 08:47   |    | 12:23 (11) | 08:07 |            | 14:18 (10) | 07:01 | 06:39 |
|                     | 15:48   | 72 | 14:43 (10) | 16:48 | 52         | 15:10 (10) | 17:50 | 19:56 |
| 5                   | 08:47   |    | 12:24 (11) | 08:05 |            | 14:19 (10) | 06:58 | 06:36 |
|                     | 15:50   | 72 | 14:44 (10) | 16:50 | 52         | 15:11 (10) | 17:53 | 19:58 |
| 6                   | 08:46   |    | 12:24 (11) | 08:03 |            | 14:20 (10) | 06:56 | 06:33 |
|                     | 15:51   | 74 | 14:46 (10) | 16:53 | 51         | 15:11 (10) | 17:55 | 20:00 |
| 7                   | 08:46   |    | 12:25 (11) | 08:00 |            | 14:19 (10) | 06:53 | 06:31 |
|                     | 15:53   | 73 | 14:47 (10) | 16:55 | 51         | 15:10 (10) | 17:57 | 20:02 |
| 8                   | 08:45   |    | 12:25 (11) | 07:58 |            | 14:20 (10) | 06:51 | 06:28 |
|                     | 15:54   | 75 | 14:49 (10) | 16:57 | 50         | 15:10 (10) | 17:59 | 20:04 |
| 9                   | 08:44   |    | 12:26 (11) | 07:56 |            | 14:21 (10) | 06:48 | 06:25 |
|                     | 15:56   | 75 | 14:50 (10) | 16:59 | 49         | 15:10 (10) | 18:01 | 20:06 |
| 10                  | 08:44   |    | 12:27 (11) | 07:54 |            | 14:21 (10) | 06:45 | 06:23 |
|                     | 15:58   | 76 | 14:52 (10) | 17:02 | 48         | 15:09 (10) | 18:03 | 20:08 |
| 11                  | 08:43   |    | 12:28 (11) | 07:52 |            | 14:22 (10) | 06:43 | 06:20 |
|                     | 15:59   | 75 | 14:53 (10) | 17:04 | 47         | 15:09 (10) | 18:05 | 20:10 |
| 12                  | 08:42   |    | 12:29 (11) | 07:50 |            | 14:23 (10) | 06:40 | 06:17 |
|                     | 16:01   | 75 | 14:55 (10) | 17:06 | 45         | 15:08 (10) | 18:08 | 20:12 |
| 13                  | 08:41   |    | 12:30 (11) | 07:47 |            | 14:24 (10) | 06:37 | 06:15 |
|                     | 16:03   | 74 | 14:56 (10) | 17:08 | 43         | 15:07 (10) | 18:10 | 20:15 |
| 14                  | 08:40   |    | 12:30 (11) | 07:45 |            | 14:25 (10) | 06:35 | 06:12 |
|                     | 16:04   | 74 | 14:57 (10) | 17:11 | 41         | 15:06 (10) | 18:12 | 20:17 |
| 15                  | 08:39   |    | 12:32 (11) | 07:43 |            | 14:26 (10) | 06:32 | 06:10 |
|                     | 16:06   | 72 | 14:58 (10) | 17:13 | 39         | 15:05 (10) | 18:14 | 20:19 |
| 16                  | 08:38   |    | 12:33 (11) | 07:40 |            | 14:28 (10) | 06:29 | 06:07 |
|                     | 16:08   | 71 | 14:59 (10) | 17:15 | 36         | 15:04 (10) | 18:16 | 20:21 |
| 17                  | 08:36   |    | 12:34 (11) | 07:38 |            | 14:29 (10) | 06:27 | 06:05 |
|                     | 16:10   | 70 | 15:01 (10) | 17:17 | 33         | 15:02 (10) | 18:18 | 20:23 |
| 18                  | 08:35   |    | 12:35 (11) | 07:36 |            | 14:32 (10) | 06:24 | 06:02 |
|                     | 16:12   | 68 | 15:01 (10) | 17:20 | 28         | 15:00 (10) | 18:20 | 20:25 |
| 19                  | 08:34   |    | 12:38 (11) | 07:33 |            | 14:34 (10) | 06:21 | 05:59 |
|                     | 16:14   | 65 | 15:03 (10) | 17:22 | 23         | 14:57 (10) | 18:22 | 20:27 |
| 20                  | 08:32   |    | 12:39 (11) | 07:31 |            | 14:39 (10) | 06:19 | 05:57 |
|                     | 16:16   | 64 | 15:03 (10) | 17:24 | 15         | 14:54 (10) | 18:24 | 20:29 |
| 21                  | 08:31   |    | 12:42 (11) | 07:29 |            |            | 06:16 | 05:54 |
|                     | 16:18   | 59 | 15:04 (10) | 17:26 |            |            | 18:27 | 20:31 |
| 22                  | 08:30   |    | 12:47 (11) | 07:26 |            |            | 06:13 | 05:52 |
|                     | 16:20   | 52 | 15:05 (10) | 17:29 |            |            | 18:29 | 20:33 |
| 23                  | 08:28   |    | 14:19 (10) | 07:24 |            |            | 06:11 | 05:49 |
|                     | 16:22   | 47 | 15:06 (10) | 17:31 |            |            | 18:31 | 20:35 |
| 24                  | 08:27   |    | 14:18 (10) | 07:21 |            |            | 06:08 | 05:47 |
|                     | 16:24   | 49 | 15:07 (10) | 17:33 |            |            | 18:33 | 20:38 |
| 25                  | 08:25   |    | 14:18 (10) | 07:19 |            |            | 06:05 | 05:45 |
|                     | 16:26   | 49 | 15:07 (10) | 17:35 |            |            | 18:35 | 20:40 |
| 26                  | 08:23   |    | 14:18 (10) | 07:16 |            |            | 06:03 | 05:42 |
|                     | 16:28   | 50 | 15:08 (10) | 17:37 |            |            | 18:37 | 20:42 |
| 27                  | 08:22   |    | 14:18 (10) | 07:14 |            |            | 06:00 | 05:40 |
|                     | 16:31   | 50 | 15:08 (10) | 17:40 |            |            | 18:39 | 20:44 |
| 28                  | 08:20   |    | 14:18 (10) | 07:11 |            |            | 05:57 | 05:37 |
|                     | 16:33   | 51 | 15:09 (10) | 17:42 |            |            | 18:41 | 20:46 |
| 29                  | 08:18   |    | 14:18 (10) |       |            |            | 05:55 | 05:35 |
|                     | 16:35   | 51 | 15:09 (10) |       |            |            | 18:43 | 20:48 |
| 30                  | 08:16   |    | 14:18 (10) |       |            |            | 06:52 | 05:33 |
|                     | 16:37   | 52 | 15:10 (10) |       |            |            | 19:45 | 20:50 |
| 31                  | 08:14   |    | 14:18 (10) |       |            |            | 06:49 | 04:34 |
|                     | 16:39   | 52 | 15:10 (10) |       |            |            | 19:47 | 21:48 |
| Potential sun hours | 235     |    | 265        |       | 365        | 425        | 507   | 529   |
| Total, worst case   | 1999    |    | 859        |       |            |            |       |       |
| Sun reduction       | 0,15    |    | 0,24       |       |            |            |       |       |
| Oper. time red.     | 0,94    |    | 0,94       |       |            |            |       |       |
| Wind dir. red.      | 0,66    |    | 0,67       |       |            |            |       |       |
| Total reduction     | 0,10    |    | 0,15       |       |            |            |       |       |
| Total, real         | 191     |    | 130        |       |            |            |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: L - Akoti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September | October | November   | December      |
|---------------------|-------|--------|-----------|---------|------------|---------------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14   | 07:19      | 13:51 (10)    |
|                     | 22:07 | 21:26  | 20:12     | 18:51   | 16:34      | 48 14:39 (10) |
| 2                   | 04:28 | 05:14  | 06:16     | 07:16   | 07:21      | 13:50 (10)    |
|                     | 22:06 | 21:24  | 20:09     | 18:49   | 16:31      | 49 14:39 (10) |
| 3                   | 04:28 | 05:16  | 06:18     | 07:18   | 07:24      | 13:50 (10)    |
|                     | 22:06 | 21:22  | 20:07     | 18:46   | 16:29      | 50 14:40 (10) |
| 4                   | 04:29 | 05:18  | 06:20     | 07:20   | 07:26      | 13:49 (10)    |
|                     | 22:05 | 21:20  | 20:04     | 18:43   | 16:27      | 51 14:40 (10) |
| 5                   | 04:30 | 05:20  | 06:22     | 07:22   | 07:28      | 13:50 (10)    |
|                     | 22:04 | 21:17  | 20:01     | 18:41   | 16:25      | 51 14:41 (10) |
| 6                   | 04:31 | 05:22  | 06:24     | 07:24   | 07:30      | 13:49 (10)    |
|                     | 22:04 | 21:15  | 19:59     | 18:38   | 16:23      | 52 14:41 (10) |
| 7                   | 04:32 | 05:24  | 06:26     | 07:26   | 07:32      | 13:49 (10)    |
|                     | 22:03 | 21:13  | 19:56     | 18:36   | 16:21      | 51 14:40 (10) |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28   | 07:34      | 13:49 (10)    |
|                     | 22:02 | 21:11  | 19:53     | 18:33   | 16:19      | 52 14:41 (10) |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30   | 07:37      | 13:49 (10)    |
|                     | 22:01 | 21:09  | 19:51     | 18:30   | 16:17      | 52 14:41 (10) |
| 10                  | 04:36 | 05:30  | 06:32     | 07:32   | 07:39      | 13:49 (10)    |
|                     | 22:00 | 21:06  | 19:48     | 18:28   | 16:15      | 53 14:42 (10) |
| 11                  | 04:37 | 05:32  | 06:34     | 07:34   | 07:41      | 13:49 (10)    |
|                     | 21:59 | 21:04  | 19:45     | 18:25   | 16:13      | 52 14:41 (10) |
| 12                  | 04:39 | 05:34  | 06:36     | 07:36   | 07:43      | 13:49 (10)    |
|                     | 21:58 | 21:02  | 19:43     | 18:22   | 16:11      | 52 14:41 (10) |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39   | 07:45      | 13:50 (10)    |
|                     | 21:57 | 20:59  | 19:40     | 18:20   | 16:09      | 51 14:41 (10) |
| 14                  | 04:41 | 05:38  | 06:40     | 07:41   | 07:47      | 13:50 (10)    |
|                     | 21:56 | 20:57  | 19:37     | 18:17   | 16:07      | 51 14:41 (10) |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43   | 07:49      | 13:51 (10)    |
|                     | 21:54 | 20:55  | 19:35     | 18:15   | 16:05      | 50 14:41 (10) |
| 16                  | 04:44 | 05:42  | 06:44     | 07:45   | 07:52      | 13:51 (10)    |
|                     | 21:53 | 20:52  | 19:32     | 18:12   | 16:03      | 50 14:41 (10) |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47   | 07:54      | 13:51 (10)    |
|                     | 21:52 | 20:50  | 19:29     | 18:10   | 16:02      | 49 14:40 (10) |
| 18                  | 04:47 | 05:46  | 06:48     | 07:49   | 07:56      | 13:52 (10)    |
|                     | 21:50 | 20:47  | 19:27     | 18:07   | 16:00      | 49 14:41 (10) |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51   | 07:58      | 13:53 (10)    |
|                     | 21:49 | 20:45  | 19:24     | 18:05   | 15:58      | 47 14:40 (10) |
| 20                  | 04:51 | 05:50  | 06:52     | 07:53   | 08:00      | 13:53 (10)    |
|                     | 21:47 | 20:43  | 19:21     | 18:02   | 15:57      | 47 14:40 (10) |
| 21                  | 04:52 | 05:52  | 06:54     | 07:55   | 08:02      | 12:20 (11)    |
|                     | 21:46 | 20:40  | 19:18     | 18:00   | 15:55      | 56 14:40 (10) |
| 22                  | 04:54 | 05:54  | 06:56     | 07:58   | 15:22 (10) | 08:04         |
|                     | 21:44 | 20:38  | 19:16     | 17:57   | 15:24      | 62 14:40 (10) |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00   | 15:06 (10) | 08:06         |
|                     | 21:42 | 20:35  | 19:13     | 17:55   | 15:27 (10) | 15:52         |
| 24                  | 04:57 | 05:58  | 07:00     | 08:02   | 15:02 (10) | 08:08         |
|                     | 21:41 | 20:33  | 19:10     | 17:52   | 15:29 (10) | 15:51         |
| 25                  | 04:59 | 06:00  | 07:02     | 08:04   | 15:00 (10) | 08:10         |
|                     | 21:39 | 20:30  | 19:08     | 17:50   | 15:31 (10) | 15:49         |
| 26                  | 05:01 | 06:02  | 07:04     | 07:06   | 13:58 (10) | 08:12         |
|                     | 21:37 | 20:27  | 19:05     | 16:48   | 14:33 (10) | 15:48         |
| 27                  | 05:03 | 06:04  | 07:06     | 07:08   | 13:56 (10) | 08:14         |
|                     | 21:35 | 20:25  | 19:02     | 16:45   | 14:34 (10) | 15:47         |
| 28                  | 05:05 | 06:06  | 07:08     | 07:11   | 13:55 (10) | 08:16         |
|                     | 21:34 | 20:22  | 19:00     | 16:43   | 14:35 (10) | 15:45         |
| 29                  | 05:07 | 06:08  | 07:10     | 07:13   | 13:54 (10) | 08:17         |
|                     | 21:32 | 20:20  | 18:57     | 16:40   | 14:37 (10) | 15:44         |
| 30                  | 05:08 | 06:10  | 07:12     | 07:15   | 13:53 (10) | 08:19         |
|                     | 21:30 | 20:17  | 18:54     | 16:38   | 14:37 (10) | 15:43         |
| 31                  | 05:10 | 06:12  |           | 07:17   | 13:52 (10) |               |
|                     | 21:28 | 20:15  |           | 16:36   | 14:38 (10) |               |
| Potential sun hours | 530   | 470    | 385       | 324     | 248        | 216           |
| Total, worst case   |       |        |           | 337     | 1689       | 2242          |
| Sun reduction       |       |        |           | 0,27    | 0,09       | 0,09          |
| Oper. time red.     |       |        |           | 0,94    | 0,94       | 0,94          |
| Wind dir. red.      |       |        |           | 0,67    | 0,67       | 0,65          |
| Total reduction     |       |        |           | 0,17    | 0,06       | 0,05          |
| Total, real         |       |        |           | 57      | 97         | 118           |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: M - Linares

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:53 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:51 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:01 | 21:55 | 22:05 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:35    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:45   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:06 | 20:10 | 21:13 | 22:02 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:01   | 17:06    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:38 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:55 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:08 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:29    | 18:29 | 20:33 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:54    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 19:00     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:49    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:15   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: N - Lamani 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:53 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:51 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:01 | 21:55 | 22:05 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:34 | 05:26  | 06:28     | 07:28   | 07:35    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:45   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:06 | 20:11 | 21:13 | 22:02 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:01   | 17:06    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:38 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:55 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:08 | 21:46 | 20:40  | 19:19     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:29    | 18:29 | 20:33 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:54    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 19:00     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:49    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:15   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: O - Rožlejas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:18  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:35    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:11 | 22:01 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:06 | 20:10 | 21:13 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:29    | 18:29 | 20:33 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 19:00     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: P - Aizupes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:22<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:53 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:53 | 07:01<br>17:55 | 06:39<br>20:00 | 05:23<br>21:03 | 04:30<br>21:56 | 04:29<br>22:04 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:07 | 04:26<br>21:59 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:34 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:36 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:15<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: Q - Kumelites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:48 | 08:07<br>16:48 | 07:01<br>17:50 | 06:39<br>19:56 | 05:23<br>20:58 | 04:30<br>21:54 | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:13 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: R - Dzila Vada

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:57 | 04:31<br>21:53 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:48<br>15:49 | 08:07<br>16:48 | 07:01<br>17:51 | 06:39<br>19:56 | 05:23<br>20:59 | 04:30<br>21:54 | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:21<br>21:01 | 04:29<br>21:55 | 04:30<br>22:05 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:47<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:16 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:58 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:59<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:26<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:11 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:03 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:17 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:23 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:07 | 04:47<br>21:51 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:45<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:48 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:47<br>21:34 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:47<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:24<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:41 | 04:24<br>22:08 | 05:01<br>21:38 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:09<br>16:45 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:49<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:08 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:44 | 08:49<br>15:41 |
| 30                  | 08:17<br>16:37 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:20<br>15:43 | 08:49<br>15:42 |
| 31                  | 08:15<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:49<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: S - Vecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |      | February   |       | March      | April      | May   | June  |
|---------------------|---------|------|------------|-------|------------|------------|-------|-------|
| 1                   | 08:48   |      | 12:02 (8)  | 08:13 | 08:46 (10) | 07:09      | 06:47 | 05:30 |
|                     | 15:45   | 59   | 14:05 (15) | 16:42 | 14         | 09:00 (10) | 17:44 | 19:50 |
| 2                   | 08:48   |      | 12:03 (8)  | 08:11 | 08:44 (10) | 07:06      | 06:44 | 05:28 |
|                     | 15:46   | 57   | 14:05 (15) | 16:44 | 18         | 09:02 (10) | 17:46 | 19:52 |
| 3                   | 08:48   |      | 12:03 (8)  | 08:09 | 08:42 (10) | 07:04      | 06:41 | 05:26 |
|                     | 15:47   | 56   | 14:05 (15) | 16:46 | 21         | 09:03 (10) | 17:48 | 19:54 |
| 4                   | 08:47   |      | 12:05 (8)  | 08:07 | 08:40 (10) | 07:01      | 06:39 | 05:23 |
|                     | 15:49   | 55   | 14:06 (15) | 16:48 | 23         | 09:03 (10) | 17:51 | 19:56 |
| 5                   | 08:47   |      | 12:05 (8)  | 08:05 | 08:39 (10) | 06:58      | 06:36 | 05:21 |
|                     | 15:50   | 54   | 14:06 (15) | 16:51 | 25         | 09:04 (10) | 17:53 | 19:58 |
| 6                   | 08:46   |      | 12:06 (8)  | 08:03 | 08:40 (10) | 06:56      | 06:33 | 05:19 |
|                     | 15:51   | 52   | 14:06 (15) | 16:53 | 24         | 09:04 (10) | 17:55 | 20:00 |
| 7                   | 08:46   |      | 12:07 (8)  | 08:01 | 08:40 (10) | 06:53      | 06:31 | 05:17 |
|                     | 15:53   | 50   | 14:06 (15) | 16:55 | 25         | 09:05 (10) | 17:57 | 20:02 |
| 8                   | 08:45   |      | 12:08 (8)  | 07:58 | 08:39 (10) | 06:51      | 06:28 | 05:15 |
|                     | 15:54   | 48   | 14:06 (15) | 16:57 | 25         | 09:04 (10) | 17:59 | 20:04 |
| 9                   | 08:44   |      | 12:10 (8)  | 07:56 | 08:40 (10) | 06:48      | 06:25 | 05:12 |
|                     | 15:56   | 44   | 14:06 (15) | 17:00 | 25         | 09:05 (10) | 18:01 | 20:06 |
| 10                  | 08:44   |      | 12:11 (8)  | 07:54 | 08:40 (10) | 06:45      | 06:23 | 05:10 |
|                     | 15:58   | 41   | 14:05 (15) | 17:02 | 25         | 09:05 (10) | 18:03 | 20:08 |
| 11                  | 08:43   |      | 12:13 (8)  | 07:52 | 08:40 (10) | 06:43      | 06:20 | 05:08 |
|                     | 15:59   | 36   | 14:05 (15) | 17:04 | 24         | 09:04 (10) | 18:06 | 20:10 |
| 12                  | 08:42   |      | 12:16 (8)  | 07:50 | 08:41 (10) | 06:40      | 06:18 | 05:06 |
|                     | 16:01   | 30   | 14:05 (15) | 17:06 | 23         | 09:04 (10) | 18:08 | 20:13 |
| 13                  | 08:41   |      | 13:47 (15) | 07:47 | 08:41 (10) | 06:38      | 06:15 | 05:04 |
|                     | 16:03   | 18   | 14:05 (15) | 17:09 | 22         | 09:03 (10) | 18:10 | 20:15 |
| 14                  | 08:40   |      | 13:48 (15) | 07:45 | 08:43 (10) | 06:35      | 06:12 | 05:02 |
|                     | 16:05   | 15   | 14:03 (15) | 17:11 | 19         | 09:02 (10) | 18:12 | 20:17 |
| 15                  | 08:39   |      | 13:50 (15) | 07:43 | 08:43 (10) | 06:32      | 06:10 | 05:00 |
|                     | 16:06   | 12   | 14:02 (15) | 17:13 | 17         | 09:00 (10) | 18:14 | 20:19 |
| 16                  | 08:38   |      | 13:54 (15) | 07:41 | 08:46 (10) | 06:30      | 06:07 | 04:58 |
|                     | 16:08   | 7    | 14:01 (15) | 17:15 | 13         | 08:59 (10) | 18:16 | 20:21 |
| 17                  | 08:36   |      |            | 07:38 | 08:49 (10) | 06:27      | 06:05 | 04:56 |
|                     | 16:10   |      |            | 17:18 | 5          | 08:54 (10) | 18:18 | 20:23 |
| 18                  | 08:35   |      |            | 07:36 |            | 06:24      | 06:02 | 04:54 |
|                     | 16:12   |      |            | 17:20 |            | 18:20      | 20:25 | 21:26 |
| 19                  | 08:34   |      |            | 07:33 |            | 06:22      | 06:00 | 04:53 |
|                     | 16:14   |      |            | 17:22 |            | 18:23      | 20:27 | 21:28 |
| 20                  | 08:33   |      |            | 07:31 |            | 06:19      | 05:57 | 04:51 |
|                     | 16:16   |      |            | 17:24 |            | 18:25      | 20:29 | 21:30 |
| 21                  | 08:31   |      |            | 07:29 |            | 06:16      | 05:55 | 04:49 |
|                     | 16:18   |      |            | 17:26 |            | 18:27      | 20:31 | 21:32 |
| 22                  | 08:30   |      |            | 07:26 |            | 06:13      | 05:52 | 04:47 |
|                     | 16:20   |      |            | 17:29 |            | 18:29      | 20:33 | 21:33 |
| 23                  | 08:28   |      |            | 07:24 |            | 06:11      | 05:50 | 04:46 |
|                     | 16:22   |      |            | 17:31 |            | 18:31      | 20:36 | 21:35 |
| 24                  | 08:27   |      |            | 07:21 |            | 06:08      | 05:47 | 04:44 |
|                     | 16:24   |      |            | 17:33 |            | 18:33      | 20:38 | 21:37 |
| 25                  | 08:25   |      |            | 07:19 |            | 06:05      | 05:45 | 04:43 |
|                     | 16:26   |      |            | 17:35 |            | 18:35      | 20:40 | 21:39 |
| 26                  | 08:23   |      |            | 07:16 |            | 06:03      | 05:42 | 04:41 |
|                     | 16:29   |      |            | 17:37 |            | 18:37      | 20:42 | 21:40 |
| 27                  | 08:22   |      |            | 07:14 |            | 06:00      | 05:40 | 04:40 |
|                     | 16:31   |      |            | 17:40 |            | 18:39      | 20:44 | 21:42 |
| 28                  | 08:20   |      |            | 07:11 |            | 05:57      | 05:37 | 04:38 |
|                     | 16:33   |      |            | 17:42 |            | 18:41      | 20:46 | 21:44 |
| 29                  | 08:18   |      | 08:52 (10) |       |            | 05:55      | 05:35 | 04:37 |
|                     | 16:35   | 2    | 08:54 (10) |       |            | 18:43      | 20:48 | 21:45 |
| 30                  | 08:16   |      | 08:50 (10) |       |            | 06:52      | 05:33 | 04:36 |
|                     | 16:37   | 7    | 08:57 (10) |       |            | 19:45      | 20:50 | 21:47 |
| 31                  | 08:15   |      | 08:48 (10) |       |            | 06:49      |       | 04:34 |
|                     | 16:39   | 11   | 08:59 (10) |       |            | 19:48      |       | 21:48 |
| Potential sun hours | 235     |      |            | 265   |            | 365        | 425   | 507   |
| Total, worst case   |         | 654  |            | 348   |            |            |       |       |
| Sun reduction       |         | 0,15 |            | 0,24  |            |            |       |       |
| Oper. time red.     |         | 0,94 |            | 0,94  |            |            |       |       |
| Wind dir. red.      |         | 0,64 |            | 0,60  |            |            |       |       |
| Total reduction     |         | 0,09 |            | 0,14  |            |            |       |       |
| Total, real         |         | 61   |            | 47    |            |            |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: S - Vecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September | October                           | November                                              | December                   |
|---------------------|-------|--------|-----------|-----------------------------------|-------------------------------------------------------|----------------------------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14                             | 07:19                                                 | 08:09 (10) 08:21 11:57 (8) |
|                     | 22:07 | 21:26  | 20:12     | 18:52                             | 16:34 25 08:34 (10) 15:42 33 13:47 (15)               |                            |
| 2                   | 04:28 | 05:14  | 06:16     | 07:16                             | 07:21                                                 | 08:09 (10) 08:23 11:55 (8) |
|                     | 22:06 | 21:24  | 20:09     | 18:49                             | 16:32 25 08:34 (10) 15:41 38 13:48 (15)               |                            |
| 3                   | 04:28 | 05:16  | 06:18     | 07:18                             | 07:24                                                 | 08:09 (10) 08:25 11:54 (8) |
|                     | 22:06 | 21:22  | 20:07     | 18:46                             | 16:29 25 08:34 (10) 15:40 42 13:49 (15)               |                            |
| 4                   | 04:29 | 05:18  | 06:20     | 07:20                             | 07:26                                                 | 08:09 (10) 08:26 11:54 (8) |
|                     | 22:05 | 21:20  | 20:04     | 18:44                             | 16:27 25 08:34 (10) 15:40 44 13:50 (15)               |                            |
| 5                   | 04:30 | 05:20  | 06:22     | 07:22                             | 07:28                                                 | 08:09 (10) 08:28 11:54 (8) |
|                     | 22:04 | 21:18  | 20:02     | 18:41                             | 16:25 25 08:34 (10) 15:39 47 13:51 (15)               |                            |
| 6                   | 04:31 | 05:22  | 06:24     | 07:24                             | 07:30                                                 | 08:09 (10) 08:29 11:53 (8) |
|                     | 22:04 | 21:15  | 19:59     | 18:38                             | 16:23 25 08:34 (10) 15:38 49 13:51 (15)               |                            |
| 7                   | 04:32 | 05:24  | 06:26     | 07:26                             | 07:32                                                 | 08:09 (10) 08:31 11:53 (8) |
|                     | 22:03 | 21:13  | 19:56     | 18:36                             | 16:21 24 08:33 (10) 15:37 53 13:53 (15)               |                            |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28                             | 07:35                                                 | 08:11 (10) 08:32 11:53 (8) |
|                     | 22:02 | 21:11  | 19:54     | 18:33                             | 16:19 22 08:33 (10) 15:37 54 13:54 (15)               |                            |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30                             | 07:37                                                 | 08:13 (10) 08:34 11:52 (8) |
|                     | 22:01 | 21:09  | 19:51     | 18:30                             | 16:17 19 08:32 (10) 15:36 56 13:54 (15)               |                            |
| 10                  | 04:36 | 05:30  | 06:32     | 07:32                             | 07:39                                                 | 08:16 (10) 08:35 11:53 (8) |
|                     | 22:00 | 21:06  | 19:48     | 18:28                             | 16:15 16 08:32 (10) 15:36 57 13:55 (15)               |                            |
| 11                  | 04:37 | 05:32  | 06:34     | 07:34                             | 07:41                                                 | 08:18 (10) 08:36 11:53 (8) |
|                     | 21:59 | 21:04  | 19:45     | 18:25                             | 16:13 13 08:31 (10) 15:36 57 13:55 (15)               |                            |
| 12                  | 04:39 | 05:34  | 06:36     | 07:37                             | 07:43                                                 | 08:21 (10) 08:37 11:52 (8) |
|                     | 21:58 | 21:02  | 19:43     | 18:23                             | 16:11 9 08:30 (10) 15:35 59 13:55 (15)                |                            |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39                             | 07:45                                                 | 08:23 (10) 08:39 11:53 (8) |
|                     | 21:57 | 21:00  | 19:40     | 18:20                             | 16:09 4 08:27 (10) 15:35 60 13:57 (15)                |                            |
| 14                  | 04:41 | 05:38  | 06:40     | 07:41                             | 07:47                                                 | 08:40 11:53 (8)            |
|                     | 21:56 | 20:57  | 19:37     | 18:17                             | 16:07 15:35 61 13:57 (15)                             |                            |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43                             | 07:50                                                 | 08:41 11:53 (8)            |
|                     | 21:54 | 20:55  | 19:35     | 18:15                             | 16:05 15:35 62 13:58 (15)                             |                            |
| 16                  | 04:44 | 05:42  | 06:44     | 07:45                             | 07:52                                                 | 08:42 11:54 (8)            |
|                     | 21:53 | 20:52  | 19:32     | 18:12                             | 16:03 15:35 61 13:58 (15)                             |                            |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47                             | 07:54                                                 | 08:43 11:54 (8)            |
|                     | 21:52 | 20:50  | 19:29     | 18:10                             | 16:02 15:35 62 13:59 (15)                             |                            |
| 18                  | 04:47 | 05:46  | 06:48     | 07:49                             | 07:56                                                 | 08:44 11:55 (8)            |
|                     | 21:50 | 20:48  | 19:27     | 18:07                             | 16:00 15:35 61 13:59 (15)                             |                            |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51                             | 07:58                                                 | 08:44 11:54 (8)            |
|                     | 21:49 | 20:45  | 19:24     | 18:05                             | 15:58 15:35 63 13:59 (15)                             |                            |
| 20                  | 04:51 | 05:50  | 06:52     | 07:53                             | 08:00                                                 | 08:45 11:55 (8)            |
|                     | 21:47 | 20:43  | 19:21     | 18:02                             | 15:57 15:35 63 14:00 (15)                             |                            |
| 21                  | 04:52 | 05:52  | 06:54     | 07:56                             | 08:02                                                 | 08:46 11:56 (8)            |
|                     | 21:46 | 20:40  | 19:19     | 18:00                             | 15:55 15:36 63 14:01 (15)                             |                            |
| 22                  | 04:54 | 05:54  | 06:56     | 07:58                             | 08:04                                                 | 08:46 11:56 (8)            |
|                     | 21:44 | 20:38  | 19:16     | 17:57                             | 15:54 15:36 63 14:01 (15)                             |                            |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00                             | 08:06                                                 | 08:47 11:57 (8)            |
|                     | 21:43 | 20:35  | 19:13     | 17:55                             | 15:52 15:37 63 14:02 (15)                             |                            |
| 24                  | 04:58 | 05:58  | 07:00     | 08:02                             | 08:08                                                 | 08:47 11:57 (8)            |
|                     | 21:41 | 20:33  | 19:10     | 17:52                             | 15:51 15:37 63 14:02 (15)                             |                            |
| 25                  | 04:59 | 06:00  | 07:02     | 08:04                             | 08:10                                                 | 08:48 11:57 (8)            |
|                     | 21:39 | 20:30  | 19:08     | 17:50                             | 15:49 15:38 63 14:02 (15)                             |                            |
| 26                  | 05:01 | 06:02  | 07:04     | 07:06                             | 08:12                                                 | 08:48 11:58 (8)            |
|                     | 21:37 | 20:28  | 19:05     | 16:48                             | 11 08:27 (10) 15:48 61 14:02 (15)                     |                            |
| 27                  | 05:03 | 06:04  | 07:06     | 07:08                             | 08:14 (10) 08:14                                      | 13:31 (15) 08:48 11:58 (8) |
|                     | 21:36 | 20:25  | 19:02     | 16:45                             | 15 08:29 (10) 15:47 9 13:40 (15) 15:40 62 14:03 (15)  |                            |
| 28                  | 05:05 | 06:06  | 07:08     | 07:11                             | 08:13 (10) 08:16                                      | 13:29 (15) 08:48 11:59 (8) |
|                     | 21:34 | 20:22  | 19:00     | 16:43                             | 18 08:31 (10) 15:46 13 13:42 (15) 15:40 61 14:03 (15) |                            |
| 29                  | 05:07 | 06:08  | 07:10     | 07:13                             | 08:11 (10) 08:18                                      | 13:27 (15) 08:48 11:59 (8) |
|                     | 21:32 | 20:20  | 18:57     | 16:41                             | 21 08:32 (10) 15:44 17 13:44 (15) 15:41 62 14:04 (15) |                            |
| 30                  | 05:08 | 06:10  | 07:12     | 07:15                             | 08:10 (10) 08:19                                      | 12:00 (8) 08:48 12:00 (8)  |
|                     | 21:30 | 20:17  | 18:54     | 16:38                             | 23 08:33 (10) 15:43 24 13:46 (15) 15:42 61 14:04 (15) |                            |
| 31                  | 05:10 | 06:12  | 07:17     | 07:17                             | 08:10 (10) 08:48                                      | 12:01 (8)                  |
|                     | 21:28 | 20:15  | 16:36     | 24 08:34 (10) 15:43 60 14:05 (15) |                                                       |                            |
| Potential sun hours | 530   | 470    | 385       | 324                               | 248                                                   | 216                        |
| Total, worst case   |       |        |           | 112                               | 320                                                   | 1764                       |
| Sun reduction       |       |        |           | 0,27                              | 0,09                                                  | 0,09                       |
| Oper. time red.     |       |        |           | 0,94                              | 0,94                                                  | 0,94                       |
| Wind dir. red.      |       |        |           | 0,60                              | 0,61                                                  | 0,64                       |
| Total reduction     |       |        |           | 0,15                              | 0,05                                                  | 0,05                       |
| Total, real         |       |        |           | 17                                | 17                                                    | 92                         |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: T - Rutini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:53 | 07:01<br>17:55 | 06:39<br>20:00 | 05:23<br>21:02 | 04:30<br>21:56 | 04:29<br>22:04 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:07 | 04:26<br>21:59 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:17<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:22 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:36 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:18<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:15<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: U - Viksnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |    | February   |       | March      | April      | May   | June  |
|---------------------|---------|----|------------|-------|------------|------------|-------|-------|
| 1                   | 08:48   |    | 09:48 (11) | 08:13 | 10:28 (10) | 07:09      | 06:47 | 05:30 |
|                     | 15:45   | 85 | 14:17 (6)  | 16:42 | 75         | 16:09 (15) | 17:44 | 19:50 |
| 2                   | 08:48   |    | 09:48 (11) | 08:11 |            | 10:30 (10) | 07:06 | 06:44 |
|                     | 15:46   | 86 | 14:18 (6)  | 16:44 | 75         | 16:12 (15) | 17:46 | 19:52 |
| 3                   | 08:48   |    | 09:48 (11) | 08:09 |            | 10:32 (10) | 07:04 | 06:41 |
|                     | 15:47   | 86 | 14:18 (6)  | 16:46 | 73         | 16:15 (15) | 17:48 | 19:54 |
| 4                   | 08:47   |    | 09:49 (11) | 08:07 |            | 10:34 (10) | 07:01 | 06:39 |
|                     | 15:49   | 85 | 14:18 (6)  | 16:48 | 66         | 16:14 (15) | 17:51 | 19:56 |
| 5                   | 08:47   |    | 09:49 (11) | 08:05 |            | 10:39 (10) | 06:58 | 06:36 |
|                     | 15:50   | 85 | 14:18 (6)  | 16:51 | 55         | 16:15 (15) | 17:53 | 19:58 |
| 6                   | 08:46   |    | 09:50 (11) | 08:03 |            | 15:13 (8)  | 06:56 | 06:33 |
|                     | 15:51   | 83 | 14:18 (6)  | 16:53 | 45         | 16:15 (15) | 17:55 | 20:00 |
| 7                   | 08:46   |    | 09:50 (11) | 08:01 |            | 15:15 (8)  | 06:53 | 06:31 |
|                     | 15:53   | 82 | 14:17 (6)  | 16:55 | 43         | 16:16 (15) | 17:57 | 20:02 |
| 8                   | 08:45   |    | 09:50 (11) | 07:58 |            | 15:16 (8)  | 06:51 | 06:28 |
|                     | 15:54   | 81 | 14:17 (6)  | 16:57 | 38         | 16:15 (15) | 17:59 | 20:04 |
| 9                   | 08:44   |    | 09:51 (11) | 07:56 |            | 15:20 (8)  | 06:48 | 06:25 |
|                     | 15:56   | 78 | 14:16 (6)  | 16:59 | 31         | 16:15 (15) | 18:01 | 20:06 |
| 10                  | 08:44   |    | 09:51 (11) | 07:54 |            | 15:53 (15) | 06:45 | 06:23 |
|                     | 15:58   | 79 | 15:19 (8)  | 17:02 | 21         | 16:14 (15) | 18:03 | 20:08 |
| 11                  | 08:43   |    | 09:52 (11) | 07:52 |            | 15:54 (15) | 06:43 | 06:20 |
|                     | 15:59   | 76 | 15:21 (8)  | 17:04 | 19         | 16:13 (15) | 18:06 | 20:10 |
| 12                  | 08:42   |    | 09:52 (11) | 07:50 |            | 15:56 (15) | 06:40 | 06:18 |
|                     | 16:01   | 80 | 15:23 (8)  | 17:06 | 17         | 16:13 (15) | 18:08 | 20:13 |
| 13                  | 08:41   |    | 09:53 (11) | 07:47 |            | 15:57 (15) | 06:37 | 06:15 |
|                     | 16:03   | 82 | 15:25 (8)  | 17:08 | 13         | 16:10 (15) | 18:10 | 20:15 |
| 14                  | 08:40   |    | 09:53 (11) | 07:45 |            | 16:00 (15) | 06:35 | 06:12 |
|                     | 16:04   | 85 | 15:27 (8)  | 17:11 | 8          | 16:08 (15) | 18:12 | 20:17 |
| 15                  | 08:39   |    | 09:54 (11) | 07:43 |            | 06:32      | 06:10 | 05:00 |
|                     | 16:06   | 88 | 15:29 (8)  | 17:13 |            | 18:14      | 20:19 | 21:20 |
| 16                  | 08:38   |    | 09:54 (11) | 07:41 |            | 06:29      | 06:07 | 04:58 |
|                     | 16:08   | 90 | 15:30 (8)  | 17:15 |            | 18:16      | 20:21 | 21:22 |
| 17                  | 08:36   |    | 09:55 (11) | 07:38 |            | 06:27      | 06:05 | 04:56 |
|                     | 16:10   | 90 | 15:31 (8)  | 17:17 |            | 18:18      | 20:23 | 21:24 |
| 18                  | 08:35   |    | 09:56 (11) | 07:36 |            | 06:24      | 06:02 | 04:54 |
|                     | 16:12   | 90 | 15:32 (8)  | 17:20 |            | 18:20      | 20:25 | 21:26 |
| 19                  | 08:34   |    | 09:57 (11) | 07:33 |            | 06:21      | 06:00 | 04:53 |
|                     | 16:14   | 91 | 15:33 (8)  | 17:22 |            | 18:22      | 20:27 | 21:28 |
| 20                  | 08:33   |    | 09:58 (11) | 07:31 |            | 06:19      | 05:57 | 04:51 |
|                     | 16:16   | 92 | 15:34 (8)  | 17:24 |            | 18:25      | 20:29 | 21:30 |
| 21                  | 08:31   |    | 09:58 (11) | 07:29 |            | 06:16      | 05:54 | 04:49 |
|                     | 16:18   | 92 | 15:34 (8)  | 17:26 |            | 18:27      | 20:31 | 21:32 |
| 22                  | 08:30   |    | 10:00 (11) | 07:26 |            | 06:13      | 05:52 | 04:47 |
|                     | 16:20   | 92 | 15:36 (8)  | 17:29 |            | 18:29      | 20:33 | 21:33 |
| 23                  | 08:28   |    | 10:01 (11) | 07:24 |            | 06:11      | 05:49 | 04:46 |
|                     | 16:22   | 91 | 15:36 (8)  | 17:31 |            | 18:31      | 20:35 | 21:35 |
| 24                  | 08:27   |    | 10:03 (11) | 07:21 |            | 06:08      | 05:47 | 04:44 |
|                     | 16:24   | 89 | 15:37 (8)  | 17:33 |            | 18:33      | 20:38 | 21:37 |
| 25                  | 08:25   |    | 10:05 (11) | 07:19 |            | 06:05      | 05:45 | 04:43 |
|                     | 16:26   | 85 | 15:37 (8)  | 17:35 |            | 18:35      | 20:40 | 21:39 |
| 26                  | 08:23   |    | 10:08 (11) | 07:16 |            | 06:03      | 05:42 | 04:41 |
|                     | 16:28   | 78 | 15:37 (8)  | 17:37 |            | 18:37      | 20:42 | 21:40 |
| 27                  | 08:22   |    | 10:22 (10) | 07:14 |            | 06:00      | 05:40 | 04:40 |
|                     | 16:31   | 71 | 15:38 (8)  | 17:40 |            | 18:39      | 20:44 | 21:42 |
| 28                  | 08:20   |    | 10:23 (10) | 07:11 |            | 05:57      | 05:37 | 04:38 |
|                     | 16:33   | 72 | 15:59 (15) | 17:42 |            | 18:41      | 20:46 | 21:44 |
| 29                  | 08:18   |    | 10:24 (10) |       |            | 05:55      | 05:35 | 04:37 |
|                     | 16:35   | 74 | 16:02 (15) |       |            | 18:43      | 20:48 | 21:45 |
| 30                  | 08:16   |    | 10:25 (10) |       |            | 06:52      | 05:33 | 04:36 |
|                     | 16:37   | 75 | 16:04 (15) |       |            | 19:45      | 20:50 | 21:47 |
| 31                  | 08:14   |    | 10:26 (10) |       |            | 06:49      |       | 04:34 |
|                     | 16:39   | 76 | 16:07 (15) |       |            | 19:48      |       | 21:48 |
| Potential sun hours | 235     |    | 265        |       | 365        | 425        | 507   | 529   |
| Total, worst case   | 2589    |    | 579        |       |            |            |       |       |
| Sun reduction       | 0,15    |    | 0,24       |       |            |            |       |       |
| Oper. time red.     | 0,94    |    | 0,94       |       |            |            |       |       |
| Wind dir. red.      | 0,62    |    | 0,66       |       |            |            |       |       |
| Total reduction     | 0,09    |    | 0,15       |       |            |            |       |       |
| Total, real         | 234     |    | 86         |       |            |            |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: U - Viksnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September | October | November | December |
|---------------------|-------|--------|-----------|---------|----------|----------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
| 2                   | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
| 3                   | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
| 4                   | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
| 5                   | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
| 6                   | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
| 7                   | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
| 10                  | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
| 11                  | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
| 12                  | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
| 14                  | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
| 16                  | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
| 18                  | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
| 20                  | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
| 21                  | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:46    |
| 22                  | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
| 24                  | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
| 25                  | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
| 26                  | 05:01 | 06:02  | 07:04     | 08:06   | 08:12    | 08:48    |
| 27                  | 05:03 | 06:04  | 07:06     | 08:08   | 08:14    | 08:48    |
| 28                  | 05:05 | 06:06  | 07:08     | 08:10   | 08:16    | 08:48    |
| 29                  | 05:07 | 06:08  | 07:10     | 08:12   | 08:18    | 08:48    |
| 30                  | 05:08 | 06:10  | 07:12     | 08:14   | 08:19    | 08:48    |
| 31                  | 05:10 | 06:12  | 07:14     | 08:16   | 08:21    | 08:48    |
| Potential sun hours | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |       |        |           |         | 2180     | 2644     |
| Sun reduction       |       |        |           |         | 0,09     | 0,09     |
| Oper. time red.     |       |        |           |         | 0,94     | 0,94     |
| Wind dir. red.      |       |        |           |         | 0,63     | 0,62     |
| Total reduction     |       |        |           |         | 0,05     | 0,05     |
| Total, real         |       |        |           |         | 120      | 132      |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: V - Dimanti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:22<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:53 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:57 | 07:01<br>17:59 | 06:39<br>20:00 | 05:23<br>21:03 | 04:30<br>21:56 | 04:29<br>22:04 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:21<br>21:01 | 04:29<br>21:55 | 04:30<br>22:05 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:58 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:59<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:07 | 04:26<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:11 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:45<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:47<br>21:34 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:09<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:44 | 08:49<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:49<br>15:42 |
| 31                  | 08:15<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: W - Rudziši

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:22<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:53 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:57 | 07:01<br>17:59 | 06:39<br>20:00 | 05:23<br>20:58 | 04:30<br>21:54 | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:01 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:07 | 04:26<br>21:59 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:24<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:34 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:36 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:15<br>16:39 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: X - Podnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:00    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:11 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:08 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 19:00     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: Y - Stimbinaja

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:46 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:03 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:38 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:00    | 06:53 | 06:31 | 05:16 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:35   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:18    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:25 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:12    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:08 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:10    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:39    |
|                     | 16:02   | 17:08    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:22 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:34    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:50 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:56    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:36    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:37 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:50    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:23 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:38    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:39 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:30   | 17:39    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:24 | 05:04 | 06:06  | 07:08     | 07:10   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 426   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: Z - Marsnica

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:46   | 08:00    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:34    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:08 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:08    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:04   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:38   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:46    |
|                     | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:26   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:44 | 22:08 | 21:34 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AA - Vilkmuiža

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:09<br>17:44 | 06:47<br>19:49 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:07<br>16:57 | 07:01<br>17:59 | 06:38<br>20:00 | 05:23<br>21:02 | 04:30<br>21:56 | 04:29<br>22:04 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:25<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:40 | 04:42<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:23<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:38 |
| 27                  | 08:22<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:08 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AB - Vecergli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:41 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:48 | 08:07<br>16:48 | 07:01<br>17:50 | 06:39<br>19:56 | 05:23<br>20:58 | 04:30<br>21:54 | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:31<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:25<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:16 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:22<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:50 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:40 | 04:42<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:23<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:38 |
| 27                  | 08:22<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:08 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:24<br>22:08 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:16<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:47 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 426            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AC - Kvie š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:31<br>21:53 | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:48 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:30<br>21:54 | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:21<br>21:01 | 04:29<br>21:55 | 04:31<br>22:05 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:32<br>22:04 | 05:22<br>21:16 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:58 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:11 | 05:08<br>21:13 | 04:25<br>22:02 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:22<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:45<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:38 |
| 26                  | 08:24<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:09<br>16:45 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 05:38<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:49<br>15:41 |
| 30                  | 08:17<br>16:37 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:49<br>15:42 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AD - Me ž a Rasas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January |      | February   |       | March      |       | April     |       | May   |       | June |  |
|---------------------|---------|------|------------|-------|------------|-------|-----------|-------|-------|-------|------|--|
| 1                   | 08:48   |      | 09:30 (7)  | 08:13 | 08:49 (15) | 07:09 | 07:50 (8) | 06:47 | 05:30 | 04:33 |      |  |
|                     | 15:45   | 11   | 09:41 (7)  | 16:42 | 09:03 (15) | 17:44 | 08:15 (8) | 19:50 | 20:52 | 21:50 |      |  |
| 2                   | 08:48   |      | 09:30 (7)  | 08:11 | 08:47 (15) | 07:06 | 07:50 (8) | 06:44 | 05:28 | 04:32 |      |  |
|                     | 15:46   | 13   | 09:43 (7)  | 16:44 | 09:05 (15) | 17:46 | 08:14 (8) | 19:52 | 20:54 | 21:51 |      |  |
| 3                   | 08:48   |      | 09:29 (7)  | 08:09 | 08:46 (15) | 07:04 | 07:50 (8) | 06:41 | 05:26 | 04:31 |      |  |
|                     | 15:47   | 14   | 09:43 (7)  | 16:46 | 09:07 (15) | 17:49 | 08:13 (8) | 19:54 | 20:56 | 21:52 |      |  |
| 4                   | 08:47   |      | 09:29 (7)  | 08:07 | 08:44 (15) | 07:01 | 07:51 (8) | 06:39 | 05:23 | 04:30 |      |  |
|                     | 15:49   | 16   | 09:45 (7)  | 16:48 | 09:08 (15) | 17:51 | 08:13 (8) | 19:56 | 20:58 | 21:54 |      |  |
| 5                   | 08:47   |      | 09:28 (7)  | 08:05 | 08:43 (15) | 06:59 | 07:52 (8) | 06:36 | 05:21 | 04:29 |      |  |
|                     | 15:50   | 17   | 09:45 (7)  | 16:51 | 09:09 (15) | 17:53 | 08:11 (8) | 19:58 | 21:01 | 21:55 |      |  |
| 6                   | 08:46   |      | 09:27 (7)  | 08:03 | 08:42 (15) | 06:56 | 07:53 (8) | 06:33 | 05:19 | 04:28 |      |  |
|                     | 15:51   | 19   | 09:46 (7)  | 16:53 | 09:11 (15) | 17:55 | 08:09 (8) | 20:00 | 21:03 | 21:56 |      |  |
| 7                   | 08:46   |      | 09:26 (7)  | 08:01 | 08:42 (15) | 06:53 | 07:55 (8) | 06:31 | 05:17 | 04:27 |      |  |
|                     | 15:53   | 21   | 09:47 (7)  | 16:55 | 09:12 (15) | 17:57 | 08:07 (8) | 20:02 | 21:05 | 21:57 |      |  |
| 8                   | 08:45   |      | 09:25 (7)  | 07:59 | 08:41 (15) | 06:51 |           | 06:28 | 05:15 | 04:27 |      |  |
|                     | 15:55   | 22   | 09:47 (7)  | 16:57 | 09:12 (15) | 17:59 |           | 20:04 | 21:07 | 21:59 |      |  |
| 9                   | 08:45   |      | 09:25 (7)  | 07:56 | 08:41 (15) | 06:48 |           | 06:26 | 05:13 | 04:26 |      |  |
|                     | 15:56   | 23   | 09:48 (7)  | 17:00 | 09:13 (15) | 18:01 |           | 20:06 | 21:09 | 22:00 |      |  |
| 10                  | 08:44   |      | 09:26 (7)  | 07:54 | 08:41 (15) | 06:46 |           | 06:23 | 05:10 | 04:25 |      |  |
|                     | 15:58   | 23   | 09:49 (7)  | 17:02 | 09:14 (15) | 18:04 |           | 20:08 | 21:11 | 22:01 |      |  |
| 11                  | 08:43   |      | 09:26 (7)  | 07:52 | 08:40 (15) | 06:43 |           | 06:20 | 05:08 | 04:25 |      |  |
|                     | 15:59   | 24   | 09:50 (7)  | 17:04 | 09:13 (15) | 18:06 |           | 20:11 | 21:13 | 22:02 |      |  |
| 12                  | 08:42   |      | 09:26 (7)  | 07:50 | 08:40 (15) | 06:40 |           | 06:18 | 05:06 | 04:24 |      |  |
|                     | 16:01   | 25   | 09:51 (7)  | 17:06 | 09:14 (15) | 18:08 |           | 20:13 | 21:15 | 22:02 |      |  |
| 13                  | 08:41   |      | 09:26 (7)  | 07:48 | 08:40 (15) | 06:38 |           | 06:15 | 05:04 | 04:24 |      |  |
|                     | 16:03   | 26   | 09:52 (7)  | 17:09 | 09:13 (15) | 18:10 |           | 20:15 | 21:17 | 22:03 |      |  |
| 14                  | 08:40   |      | 09:26 (7)  | 07:45 | 08:40 (15) | 06:35 |           | 06:12 | 05:02 | 04:23 |      |  |
|                     | 16:05   | 26   | 09:52 (7)  | 17:11 | 09:14 (15) | 18:12 |           | 20:17 | 21:19 | 22:04 |      |  |
| 15                  | 08:39   |      | 09:26 (7)  | 07:43 | 08:41 (15) | 06:32 |           | 06:10 | 05:00 | 04:23 |      |  |
|                     | 16:07   | 27   | 09:53 (7)  | 17:13 | 09:14 (15) | 18:14 |           | 20:19 | 21:21 | 22:05 |      |  |
| 16                  | 08:38   |      | 09:27 (7)  | 07:41 | 08:40 (15) | 06:30 |           | 06:07 | 04:58 | 04:23 |      |  |
|                     | 16:08   | 27   | 09:54 (7)  | 17:15 | 09:13 (15) | 18:16 |           | 20:21 | 21:22 | 22:05 |      |  |
| 17                  | 08:37   |      | 09:27 (7)  | 07:38 | 08:41 (15) | 06:27 |           | 06:05 | 04:56 | 04:22 |      |  |
|                     | 16:10   | 27   | 09:54 (7)  | 17:18 | 09:13 (15) | 18:18 |           | 20:23 | 21:24 | 22:06 |      |  |
| 18                  | 08:35   |      | 09:27 (7)  | 07:36 | 08:41 (15) | 06:24 |           | 06:02 | 04:55 | 04:22 |      |  |
|                     | 16:12   | 28   | 09:55 (7)  | 17:20 | 09:12 (15) | 18:21 |           | 20:25 | 21:26 | 22:06 |      |  |
| 19                  | 08:34   |      | 09:27 (7)  | 07:34 | 08:43 (15) | 06:22 |           | 06:00 | 04:53 | 04:22 |      |  |
|                     | 16:14   | 28   | 09:55 (7)  | 17:22 | 09:12 (15) | 18:23 |           | 20:27 | 21:28 | 22:07 |      |  |
| 20                  | 08:33   |      | 09:27 (7)  | 07:31 | 08:01 (8)  | 06:19 |           | 05:57 | 04:51 | 04:22 |      |  |
|                     | 16:16   | 28   | 09:55 (7)  | 17:24 | 09:10 (15) | 18:25 |           | 20:29 | 21:30 | 22:07 |      |  |
| 21                  | 08:31   |      | 09:29 (7)  | 07:29 | 07:58 (8)  | 06:16 |           | 05:55 | 04:49 | 04:22 |      |  |
|                     | 16:18   | 27   | 09:56 (7)  | 17:27 | 09:08 (15) | 18:27 |           | 20:31 | 21:32 | 22:08 |      |  |
| 22                  | 08:30   |      | 09:29 (7)  | 07:26 | 07:56 (8)  | 06:14 |           | 05:52 | 04:48 | 04:23 |      |  |
|                     | 16:20   | 26   | 09:55 (7)  | 17:29 | 09:07 (15) | 18:29 |           | 20:34 | 21:34 | 22:08 |      |  |
| 23                  | 08:28   |      | 09:29 (7)  | 07:24 | 07:53 (8)  | 06:11 |           | 05:50 | 04:46 | 04:23 |      |  |
|                     | 16:22   | 26   | 09:55 (7)  | 17:31 | 09:04 (15) | 18:31 |           | 20:36 | 21:35 | 22:08 |      |  |
| 24                  | 08:27   |      | 09:29 (7)  | 07:21 | 07:52 (8)  | 06:08 |           | 05:47 | 04:44 | 04:23 |      |  |
|                     | 16:24   | 26   | 09:55 (7)  | 17:33 | 09:01 (15) | 18:33 |           | 20:38 | 21:37 | 22:08 |      |  |
| 25                  | 08:25   |      | 09:30 (7)  | 07:19 | 07:50 (8)  | 06:06 |           | 05:45 | 04:43 | 04:23 |      |  |
|                     | 16:27   | 25   | 09:55 (7)  | 17:35 | 08:15 (8)  | 18:35 |           | 20:40 | 21:39 | 22:08 |      |  |
| 26                  | 08:23   |      | 09:31 (7)  | 07:16 | 07:50 (8)  | 06:03 |           | 05:42 | 04:41 | 04:24 |      |  |
|                     | 16:29   | 23   | 09:54 (7)  | 17:38 | 08:15 (8)  | 18:37 |           | 20:42 | 21:40 | 22:08 |      |  |
| 27                  | 08:22   |      | 09:32 (7)  | 07:14 | 07:50 (8)  | 06:00 |           | 05:40 | 04:40 | 04:24 |      |  |
|                     | 16:31   | 22   | 09:54 (7)  | 17:40 | 08:15 (8)  | 18:39 |           | 20:44 | 21:42 | 22:08 |      |  |
| 28                  | 08:20   |      | 09:33 (7)  | 07:11 | 07:49 (8)  | 05:57 |           | 05:37 | 04:38 | 04:25 |      |  |
|                     | 16:33   | 20   | 09:53 (7)  | 17:42 | 08:15 (8)  | 18:41 |           | 20:46 | 21:44 | 22:08 |      |  |
| 29                  | 08:18   |      | 09:34 (7)  |       |            | 05:55 |           | 05:35 | 04:37 | 04:26 |      |  |
|                     | 16:35   | 18   | 09:52 (7)  |       |            | 18:44 |           | 20:48 | 21:45 | 22:07 |      |  |
| 30                  | 08:16   |      | 09:36 (7)  |       |            | 06:52 |           | 05:33 | 04:36 | 04:26 |      |  |
|                     | 16:37   | 15   | 09:51 (7)  |       |            | 19:46 |           | 20:50 | 21:47 | 22:07 |      |  |
| 31                  | 08:15   |      | 08:52 (15) |       |            | 06:49 |           |       | 04:35 |       |      |  |
|                     | 16:40   | 18   | 09:49 (7)  |       |            | 19:48 |           |       | 21:48 |       |      |  |
| Potential sun hours | 235     |      | 265        |       | 365        |       | 425       | 507   | 529   |       |      |  |
| Total, worst case   |         | 691  |            | 831   |            | 141   |           |       |       |       |      |  |
| Sun reduction       |         | 0,15 |            | 0,24  |            | 0,39  |           |       |       |       |      |  |
| Oper. time red.     |         | 0,94 |            | 0,94  |            | 0,94  |           |       |       |       |      |  |
| Wind dir. red.      |         | 0,60 |            | 0,60  |            | 0,62  |           |       |       |       |      |  |
| Total reduction     |         | 0,09 |            | 0,14  |            | 0,23  |           |       |       |       |      |  |
| Total, real         |         | 60   |            | 114   |            | 32    |           |       |       |       |      |  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AD - Me ž a Rasas

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July  | August | September | October    | November            | December                      |
|---------------------|-------|--------|-----------|------------|---------------------|-------------------------------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14      | 07:19               | 08:10 (15) 08:21 09:08 (7)    |
|                     | 22:07 | 21:26  | 20:12     | 18:52      | 16:34 33            | 08:43 (15) 15:42 24 09:32 (7) |
| 2                   | 04:28 | 05:14  | 06:16     | 07:16      | 07:22               | 08:11 (15) 08:23 09:08 (7)    |
|                     | 22:06 | 21:24  | 20:10     | 18:49      | 16:32 32            | 08:43 (15) 15:41 24 09:32 (7) |
| 3                   | 04:29 | 05:16  | 06:18     | 07:18      | 07:24               | 08:11 (15) 08:25 09:09 (7)    |
|                     | 22:06 | 21:22  | 20:07     | 18:46      | 16:29 31            | 08:42 (15) 15:41 24 09:33 (7) |
| 4                   | 04:30 | 05:18  | 06:20     | 07:20      | 07:26               | 08:11 (15) 08:26 09:10 (7)    |
|                     | 22:05 | 21:20  | 20:04     | 18:44      | 16:27 30            | 08:41 (15) 15:40 23 09:33 (7) |
| 5                   | 04:30 | 05:20  | 06:22     | 07:22      | 07:28               | 08:12 (15) 08:28 09:11 (7)    |
|                     | 22:04 | 21:18  | 20:02     | 18:41      | 16:25 29            | 08:41 (15) 15:39 22 09:33 (7) |
| 6                   | 04:32 | 05:22  | 06:24     | 07:24      | 07:30               | 08:13 (15) 08:29 09:12 (7)    |
|                     | 22:04 | 21:15  | 19:59     | 18:38      | 16:23 27            | 08:40 (15) 15:38 20 09:32 (7) |
| 7                   | 04:33 | 05:24  | 06:26     | 07:26      | 08:31 (8) 07:32     | 08:14 (15) 08:31 09:14 (7)    |
|                     | 22:03 | 21:13  | 19:56     | 18:36 11   | 08:42 (8) 16:21 25  | 08:39 (15) 15:38 18 09:32 (7) |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28      | 08:29 (8) 07:35     | 08:15 (15) 08:32 09:16 (7)    |
|                     | 22:02 | 21:11  | 19:54     | 18:33 16   | 08:45 (8) 16:19 23  | 08:38 (15) 15:37 17 09:33 (7) |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30      | 08:27 (8) 07:37     | 08:16 (15) 08:34 09:17 (7)    |
|                     | 22:01 | 21:09  | 19:51     | 18:30 19   | 08:46 (8) 16:17 20  | 08:36 (15) 15:36 15 09:32 (7) |
| 10                  | 04:36 | 05:30  | 06:32     | 07:33      | 08:25 (8) 07:39     | 08:19 (15) 08:35 09:19 (7)    |
|                     | 22:00 | 21:07  | 19:48     | 18:28 22   | 08:47 (8) 16:15 16  | 08:35 (15) 15:36 14 09:33 (7) |
| 11                  | 04:37 | 05:32  | 06:34     | 07:35      | 08:24 (8) 07:41     | 08:21 (15) 08:36 09:20 (7)    |
|                     | 21:59 | 21:04  | 19:46     | 18:25 23   | 08:47 (8) 16:13 19  | 09:19 (7) 15:36 12 09:32 (7)  |
| 12                  | 04:39 | 05:34  | 06:36     | 07:37      | 08:23 (8) 07:43     | 09:09 (7) 08:38 09:21 (7)     |
|                     | 21:58 | 21:02  | 19:43     | 18:23 24   | 08:47 (8) 16:11 13  | 09:22 (7) 15:35 11 09:32 (7)  |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39      | 08:22 (8) 07:45     | 09:07 (7) 08:39 09:23 (7)     |
|                     | 21:57 | 21:00  | 19:40     | 18:20 25   | 08:47 (8) 16:09 17  | 09:24 (7) 15:35 9 09:32 (7)   |
| 14                  | 04:42 | 05:38  | 06:40     | 07:41      | 08:23 (8) 07:48     | 09:05 (7) 08:40 09:24 (7)     |
|                     | 21:56 | 20:57  | 19:37     | 18:18 25   | 08:48 (8) 16:07 20  | 09:25 (7) 15:35 8 09:32 (7)   |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43      | 08:22 (8) 07:50     | 09:05 (7) 08:41 09:25 (7)     |
|                     | 21:54 | 20:55  | 19:35     | 18:15 26   | 08:48 (8) 16:05 22  | 09:27 (7) 15:35 7 09:32 (7)   |
| 16                  | 04:45 | 05:42  | 06:44     | 07:45      | 08:22 (8) 07:52     | 09:04 (7) 08:42 09:26 (7)     |
|                     | 21:53 | 20:53  | 19:32     | 18:12 25   | 08:47 (8) 16:04 23  | 09:27 (7) 15:35 6 09:32 (7)   |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47      | 08:22 (8) 07:54     | 09:05 (7) 08:43 09:27 (7)     |
|                     | 21:52 | 20:50  | 19:29     | 18:10 24   | 08:46 (8) 16:02 24  | 09:29 (7) 15:35 5 09:32 (7)   |
| 18                  | 04:48 | 05:46  | 06:48     | 07:49      | 08:23 (8) 07:56     | 09:04 (7) 08:44 09:28 (7)     |
|                     | 21:50 | 20:48  | 19:27     | 18:07 30   | 09:31 (15) 16:00 25 | 09:29 (7) 15:35 4 09:32 (7)   |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51      | 08:24 (8) 07:58     | 09:03 (7) 08:44 09:28 (7)     |
|                     | 21:49 | 20:45  | 19:24     | 18:05 36   | 09:35 (15) 15:58 26 | 09:29 (7) 15:35 4 09:32 (7)   |
| 20                  | 04:51 | 05:50  | 06:52     | 07:54      | 08:26 (8) 08:00     | 09:04 (7) 08:45 09:29 (7)     |
|                     | 21:47 | 20:43  | 19:21     | 18:02 38   | 09:37 (15) 15:57 27 | 09:31 (7) 15:36 3 09:32 (7)   |
| 21                  | 04:52 | 05:52  | 06:54     | 07:56      | 08:28 (8) 08:02     | 09:04 (7) 08:46 09:30 (7)     |
|                     | 21:46 | 20:40  | 19:19     | 18:00 37   | 09:38 (15) 15:55 27 | 09:31 (7) 15:36 3 09:33 (7)   |
| 22                  | 04:54 | 05:54  | 06:56     | 07:58      | 08:31 (8) 08:04     | 09:04 (7) 08:46 09:30 (7)     |
|                     | 21:44 | 20:38  | 19:16     | 17:57 35   | 09:40 (15) 15:54 27 | 09:31 (7) 15:36 3 09:33 (7)   |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00      | 08:33 (8) 08:06     | 09:04 (7) 08:47 09:31 (7)     |
|                     | 21:43 | 20:35  | 19:13     | 17:55 31   | 09:41 (15) 15:52 27 | 09:31 (7) 15:37 3 09:34 (7)   |
| 24                  | 04:58 | 05:58  | 07:00     | 08:02      | 09:11 (15) 08:08    | 09:05 (7) 08:47 09:31 (7)     |
|                     | 21:41 | 20:33  | 19:11     | 17:53 30   | 09:41 (15) 15:51 27 | 09:32 (7) 15:37 3 09:34 (7)   |
| 25                  | 04:59 | 06:00  | 07:02     | 08:04      | 09:11 (15) 08:10    | 09:05 (7) 08:48 09:31 (7)     |
|                     | 21:39 | 20:30  | 19:08     | 17:50 32   | 09:43 (15) 15:49 27 | 09:32 (7) 15:38 4 09:35 (7)   |
| 26                  | 05:01 | 06:02  | 07:04     | 07:06      | 08:10 (15) 08:12    | 09:05 (7) 08:48 09:31 (7)     |
|                     | 21:37 | 20:28  | 19:05     | 16:48 33   | 08:43 (15) 15:48 27 | 09:32 (7) 15:39 4 09:35 (7)   |
| 27                  | 05:03 | 06:04  | 07:06     | 07:09      | 08:10 (15) 08:14    | 09:05 (7) 08:48 09:31 (7)     |
|                     | 21:36 | 20:25  | 19:02     | 16:45 33   | 08:43 (15) 15:47 27 | 09:32 (7) 15:40 5 09:36 (7)   |
| 28                  | 05:05 | 06:06  | 07:08     | 07:11      | 08:10 (15) 08:16    | 09:06 (7) 08:48 09:31 (7)     |
|                     | 21:34 | 20:23  | 19:00     | 16:43 33   | 08:43 (15) 15:46 26 | 09:32 (7) 15:40 6 09:37 (7)   |
| 29                  | 05:07 | 06:08  | 07:10     | 07:13      | 08:09 (15) 08:18    | 09:06 (7) 08:48 09:31 (7)     |
|                     | 21:32 | 20:20  | 18:57     | 16:41 34   | 08:43 (15) 15:45 26 | 09:32 (7) 15:41 7 09:38 (7)   |
| 30                  | 05:09 | 06:10  | 07:12     | 07:15      | 08:09 (15) 08:19    | 09:07 (7) 08:48 09:31 (7)     |
|                     | 21:30 | 20:17  | 18:54     | 16:38 34   | 08:43 (15) 15:43 25 | 09:32 (7) 15:42 8 09:39 (7)   |
| 31                  | 05:10 | 06:12  | 07:17     | 07:17      | 08:10 (15)          | 08:48 09:31 (7)               |
|                     | 21:28 | 20:15  | 16:36 33  | 08:43 (15) | 15:43 10            | 09:41 (7)                     |
| Potential sun hours | 530   | 470    | 385       | 324        | 248                 | 216                           |
| Total, worst case   |       |        |           | 709        | 748                 | 326                           |
| Sun reduction       |       |        |           | 0,27       | 0,09                | 0,09                          |
| Oper. time red.     |       |        |           | 0,94       | 0,94                | 0,94                          |
| Wind dir. red.      |       |        |           | 0,61       | 0,60                | 0,60                          |
| Total reduction     |       |        |           | 0,15       | 0,05                | 0,05                          |
| Total, real         |       |        |           | 110        | 39                  | 16                            |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AE - Dravnieki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

| January             |       | February  |           | March      |       | April      |       | May   |            | June  |       |
|---------------------|-------|-----------|-----------|------------|-------|------------|-------|-------|------------|-------|-------|
| 1                   | 08:48 | 09:30 (7) | 08:13     | 09:37 (7)  | 07:09 | 07:41 (8)  | 06:47 | 05:30 | 04:33      |       |       |
|                     | 15:45 | 33        | 10:26 (5) | 16:42      | 21    | 09:58 (7)  | 17:44 | 50    | 09:04 (15) | 19:50 | 20:52 |
| 2                   | 08:48 | 09:30 (7) | 08:11     | 09:39 (7)  | 07:06 | 07:39 (8)  | 06:44 |       | 05:28      | 04:32 |       |
|                     | 15:46 | 35        | 10:27 (5) | 16:44      | 18    | 09:57 (7)  | 17:46 | 47    | 09:01 (15) | 19:52 | 20:54 |
| 3                   | 08:48 | 09:29 (7) | 08:09     | 09:41 (7)  | 07:04 | 07:38 (8)  | 06:41 |       | 05:26      | 04:31 |       |
|                     | 15:47 | 35        | 10:26 (5) | 16:46      | 14    | 09:55 (7)  | 17:49 | 41    | 08:57 (15) | 19:54 | 20:56 |
| 4                   | 08:47 | 09:30 (7) | 08:07     | 09:44 (7)  | 07:01 | 07:38 (8)  | 06:39 |       | 05:23      | 04:30 |       |
|                     | 15:49 | 35        | 10:27 (5) | 16:48      | 7     | 09:51 (7)  | 17:51 | 29    | 08:07 (8)  | 19:56 | 20:58 |
| 5                   | 08:47 | 09:29 (7) | 08:05     | 08:37 (6)  | 06:59 | 07:38 (8)  | 06:36 |       | 05:21      | 04:29 |       |
|                     | 15:50 | 37        | 10:27 (5) | 16:51      | 15    | 08:59 (15) | 17:53 | 28    | 08:06 (8)  | 19:58 | 21:01 |
| 6                   | 08:46 | 09:29 (7) | 08:03     | 08:35 (6)  | 06:56 | 07:37 (8)  | 06:33 |       | 05:19      | 04:28 |       |
|                     | 15:51 | 36        | 10:26 (5) | 16:53      | 26    | 09:02 (15) | 17:55 | 29    | 08:06 (8)  | 20:00 | 21:03 |
| 7                   | 08:46 | 09:29 (7) | 08:01     | 08:33 (6)  | 06:53 | 07:38 (8)  | 06:31 |       | 05:17      | 04:27 |       |
|                     | 15:53 | 35        | 10:26 (5) | 16:55      | 31    | 09:04 (15) | 17:57 | 28    | 08:06 (8)  | 20:02 | 21:05 |
| 8                   | 08:45 | 09:28 (7) | 07:59     | 08:30 (6)  | 06:51 | 07:38 (8)  | 06:28 |       | 05:15      | 04:27 |       |
|                     | 15:55 | 35        | 10:25 (5) | 16:57      | 35    | 09:05 (15) | 17:59 | 27    | 08:05 (8)  | 20:04 | 21:07 |
| 9                   | 08:44 | 09:28 (7) | 07:56     | 08:28 (6)  | 06:48 | 07:38 (8)  | 06:26 |       | 05:12      | 04:26 |       |
|                     | 15:56 | 34        | 10:25 (5) | 17:00      | 39    | 09:07 (15) | 18:01 | 26    | 08:04 (8)  | 20:06 | 21:09 |
| 10                  | 08:44 | 09:28 (7) | 07:54     | 08:26 (6)  | 06:46 | 07:39 (8)  | 06:23 |       | 05:10      | 04:25 |       |
|                     | 15:58 | 31        | 10:23 (5) | 17:02      | 43    | 09:09 (15) | 18:04 | 24    | 08:03 (8)  | 20:08 | 21:11 |
| 11                  | 08:43 | 09:28 (7) | 07:52     | 08:24 (6)  | 06:43 | 07:39 (8)  | 06:20 |       | 05:08      | 04:25 |       |
|                     | 15:59 | 26        | 09:54 (7) | 17:04      | 45    | 09:09 (15) | 18:06 | 23    | 08:02 (8)  | 20:11 | 21:13 |
| 12                  | 08:42 | 09:29 (7) | 07:50     | 08:24 (6)  | 06:40 | 07:40 (8)  | 06:18 |       | 05:06      | 04:24 |       |
|                     | 16:01 | 26        | 09:55 (7) | 17:06      | 46    | 09:10 (15) | 18:08 | 20    | 08:00 (8)  | 20:13 | 21:15 |
| 13                  | 08:41 | 09:29 (7) | 07:48     | 08:24 (6)  | 06:38 | 07:42 (8)  | 06:15 |       | 05:04      | 04:24 |       |
|                     | 16:03 | 27        | 09:56 (7) | 17:09      | 46    | 09:10 (15) | 18:10 | 15    | 07:57 (8)  | 20:15 | 21:17 |
| 14                  | 08:40 | 09:28 (7) | 07:45     | 08:24 (6)  | 06:35 | 07:45 (8)  | 06:12 |       | 05:02      | 04:23 |       |
|                     | 16:05 | 28        | 09:56 (7) | 17:11      | 47    | 09:11 (15) | 18:12 | 9     | 07:54 (8)  | 20:17 | 21:19 |
| 15                  | 08:39 | 09:29 (7) | 07:43     | 08:24 (6)  | 06:32 |            | 06:10 |       | 05:00      | 04:23 |       |
|                     | 16:07 | 28        | 09:57 (7) | 17:13      | 47    | 09:11 (15) | 18:14 |       | 20:19      | 21:20 | 22:05 |
| 16                  | 08:38 | 09:29 (7) | 07:41     | 08:25 (6)  | 06:30 |            | 06:07 |       | 04:58      | 04:23 |       |
|                     | 16:08 | 29        | 09:58 (7) | 17:15      | 47    | 09:12 (15) | 18:16 |       | 20:21      | 21:22 | 22:05 |
| 17                  | 08:37 | 09:29 (7) | 07:38     | 08:26 (6)  | 06:27 |            | 06:05 |       | 04:56      | 04:22 |       |
|                     | 16:10 | 30        | 09:59 (7) | 17:18      | 47    | 09:13 (15) | 18:18 |       | 20:23      | 21:24 | 22:06 |
| 18                  | 08:35 | 09:28 (7) | 07:36     | 08:27 (6)  | 06:24 |            | 06:02 |       | 04:55      | 04:22 |       |
|                     | 16:12 | 31        | 09:59 (7) | 17:20      | 45    | 09:12 (15) | 18:20 |       | 20:25      | 21:26 | 22:06 |
| 19                  | 08:34 | 09:29 (7) | 07:34     | 08:27 (6)  | 06:22 |            | 06:00 |       | 04:53      | 04:22 |       |
|                     | 16:14 | 31        | 10:00 (7) | 17:22      | 45    | 09:12 (15) | 18:23 |       | 20:27      | 21:28 | 22:07 |
| 20                  | 08:33 | 09:29 (7) | 07:31     | 08:30 (6)  | 06:19 |            | 05:57 |       | 04:51      | 04:22 |       |
|                     | 16:16 | 31        | 10:00 (7) | 17:24      | 42    | 09:12 (15) | 18:25 |       | 20:29      | 21:30 | 22:07 |
| 21                  | 08:31 | 09:30 (7) | 07:29     | 08:33 (15) | 06:16 |            | 05:55 |       | 04:49      | 04:22 |       |
|                     | 16:18 | 31        | 10:01 (7) | 17:27      | 39    | 09:12 (15) | 18:27 |       | 20:31      | 21:32 | 22:07 |
| 22                  | 08:30 | 09:30 (7) | 07:26     | 08:33 (15) | 06:14 |            | 05:52 |       | 04:48      | 04:23 |       |
|                     | 16:20 | 31        | 10:01 (7) | 17:29      | 39    | 09:12 (15) | 18:29 |       | 20:34      | 21:34 | 22:08 |
| 23                  | 08:28 | 09:30 (7) | 07:24     | 08:33 (15) | 06:11 |            | 05:50 |       | 04:46      | 04:23 |       |
|                     | 16:22 | 31        | 10:01 (7) | 17:31      | 38    | 09:11 (15) | 18:31 |       | 20:36      | 21:35 | 22:08 |
| 24                  | 08:27 | 09:30 (7) | 07:21     | 08:34 (15) | 06:08 |            | 05:47 |       | 04:44      | 04:23 |       |
|                     | 16:24 | 31        | 10:01 (7) | 17:33      | 36    | 09:10 (15) | 18:33 |       | 20:38      | 21:37 | 22:08 |
| 25                  | 08:25 | 09:31 (7) | 07:19     | 07:48 (8)  | 06:06 |            | 05:45 |       | 04:43      | 04:23 |       |
|                     | 16:27 | 30        | 10:01 (7) | 17:35      | 45    | 09:09 (15) | 18:35 |       | 20:40      | 21:39 | 22:08 |
| 26                  | 08:23 | 09:31 (7) | 07:16     | 07:45 (8)  | 06:03 |            | 05:42 |       | 04:41      | 04:24 |       |
|                     | 16:29 | 30        | 10:01 (7) | 17:38      | 49    | 09:08 (15) | 18:37 |       | 20:42      | 21:40 | 22:08 |
| 27                  | 08:22 | 09:32 (7) | 07:14     | 07:43 (8)  | 06:00 |            | 05:40 |       | 04:40      | 04:24 |       |
|                     | 16:31 | 29        | 10:01 (7) | 17:40      | 51    | 09:07 (15) | 18:39 |       | 20:44      | 21:42 | 22:08 |
| 28                  | 08:20 | 09:32 (7) | 07:11     | 07:41 (8)  | 05:57 |            | 05:37 |       | 04:38      | 04:25 |       |
|                     | 16:33 | 28        | 10:00 (7) | 17:42      | 51    | 09:05 (15) | 18:41 |       | 20:46      | 21:44 | 22:08 |
| 29                  | 08:18 | 09:33 (7) |           |            | 05:55 |            | 05:35 |       | 04:37      | 04:26 |       |
|                     | 16:35 | 27        | 10:00 (7) |            | 18:43 |            | 20:48 |       | 21:45      | 22:07 |       |
| 30                  | 08:16 | 09:34 (7) |           |            | 06:52 |            | 05:33 |       | 04:36      | 04:26 |       |
|                     | 16:37 | 25        | 09:59 (7) |            | 19:46 |            | 20:50 |       | 21:47      | 22:07 |       |
| 31                  | 08:15 | 09:35 (7) |           |            | 06:49 |            |       |       | 04:35      |       |       |
|                     | 16:40 | 24        | 09:59 (7) |            | 19:48 |            |       |       | 21:48      |       |       |
| Potential sun hours | 235   |           | 265       |            | 365   |            | 425   |       | 507        |       | 529   |
| Total, worst case   |       | 950       |           | 1054       |       | 396        |       |       |            |       |       |
| Sun reduction       |       | 0,15      |           | 0,24       |       | 0,39       |       |       |            |       |       |
| Oper. time red.     |       | 0,94      |           | 0,94       |       | 0,94       |       |       |            |       |       |
| Wind dir. red.      |       | 0,60      |           | 0,60       |       | 0,62       |       |       |            |       |       |
| Total reduction     |       | 0,09      |           | 0,14       |       | 0,23       |       |       |            |       |       |
| Total, real         |       | 83        |           | 145        |       | 90         |       |       |            |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AE - Dravnieki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September | October | November   | December |
|---------------------|-------|--------|-----------|---------|------------|----------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14   | 08:22 (8)  | 07:19    |
| 2                   | 04:28 | 05:14  | 06:16     | 07:16   | 08:19 (8)  | 07:22    |
| 3                   | 04:29 | 05:16  | 06:18     | 07:18   | 08:17 (8)  | 07:24    |
| 4                   | 04:30 | 05:18  | 06:20     | 07:20   | 08:16 (8)  | 07:26    |
| 5                   | 04:30 | 05:20  | 06:22     | 07:22   | 08:15 (8)  | 07:28    |
| 6                   | 04:32 | 05:22  | 06:24     | 07:24   | 08:14 (8)  | 07:30    |
| 7                   | 04:33 | 05:24  | 06:26     | 07:26   | 08:13 (8)  | 07:32    |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28   | 08:13 (8)  | 07:35    |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30   | 08:13 (8)  | 07:37    |
| 10                  | 04:36 | 05:30  | 06:32     | 07:32   | 08:13 (8)  | 07:39    |
| 11                  | 04:37 | 05:32  | 06:34     | 07:35   | 08:13 (8)  | 07:41    |
| 12                  | 04:39 | 05:34  | 06:36     | 07:37   | 08:13 (8)  | 07:43    |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39   | 08:13 (8)  | 07:45    |
| 14                  | 04:42 | 05:38  | 06:40     | 07:41   | 08:14 (8)  | 07:48    |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43   | 08:15 (8)  | 07:50    |
| 16                  | 04:45 | 05:42  | 06:44     | 07:45   | 08:17 (8)  | 07:52    |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47   | 08:19 (8)  | 07:54    |
| 18                  | 04:48 | 05:46  | 06:48     | 07:49   | 08:23 (8)  | 07:56    |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51   | 09:05 (15) | 07:58    |
| 20                  | 04:51 | 05:50  | 06:52     | 07:53   | 09:04 (15) | 08:00    |
| 21                  | 04:52 | 05:52  | 06:54     | 07:56   | 09:03 (15) | 08:02    |
| 22                  | 04:54 | 05:54  | 06:56     | 07:58   | 09:02 (6)  | 08:04    |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00   | 09:03 (15) | 08:06    |
| 24                  | 04:58 | 05:58  | 07:00     | 08:02   | 08:57 (6)  | 08:08    |
| 25                  | 04:59 | 06:00  | 07:02     | 08:04   | 08:56 (6)  | 08:10    |
| 26                  | 05:01 | 06:02  | 07:04     | 08:06   | 08:55 (6)  | 08:12    |
| 27                  | 05:03 | 06:04  | 07:06     | 08:08   | 08:54 (6)  | 08:14    |
| 28                  | 05:05 | 06:06  | 07:08     | 08:10   | 08:53 (6)  | 08:16    |
| 29                  | 05:07 | 06:08  | 07:10     | 08:12   | 08:52 (6)  | 08:18    |
| 30                  | 05:09 | 06:10  | 07:12     | 08:14   | 08:51 (6)  | 08:20    |
| 31                  | 05:10 | 06:12  | 07:14     | 08:16   | 08:50 (6)  | 08:22    |
| Potential sun hours | 530   | 470    | 385       | 324     | 248        | 216      |
| Total, worst case   |       |        |           | 1188    | 836        | 945      |
| Sun reduction       |       |        | 0,43      | 0,27    | 0,09       | 0,09     |
| Oper. time red.     |       |        | 0,94      | 0,94    | 0,94       | 0,94     |
| Wind dir. red.      |       |        | 0,62      | 0,61    | 0,60       | 0,60     |
| Total reduction     |       |        | 0,25      | 0,15    | 0,05       | 0,05     |
| Total, real         |       |        | 2         | 184     | 43         | 46       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AF - Ogu Purvs

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January                 | February                          | March                   | April                   | May                     | June                    | July                    | August                  | September               | October                 | November                | December                |            |
|---------------------|-------------------------|-----------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------|
| 1                   | 08:48<br>15:45<br>23    | 10:18 (19)<br>10:41 (19)<br>16:42 | 08:13<br>16:42<br>17:44 | 07:09<br>17:44<br>19:50 | 06:47<br>20:52<br>21:50 | 04:33<br>21:50<br>22:07 | 04:27<br>21:26<br>21:26 | 05:12<br>21:26<br>21:26 | 06:14<br>20:12<br>18:52 | 07:14<br>18:52<br>16:34 | 07:19<br>16:34<br>15:43 | 08:21<br>15:43<br>15:17 | 10:14 (19) |
| 2                   | 08:48<br>15:46<br>21    | 10:20 (19)<br>10:41 (19)<br>16:44 | 08:11<br>17:46<br>19:52 | 07:06<br>17:46<br>19:52 | 06:44<br>20:54<br>21:51 | 04:32<br>21:51<br>22:06 | 04:28<br>21:24<br>22:06 | 05:14<br>21:24<br>22:06 | 06:16<br>20:10<br>18:49 | 07:22<br>18:49<br>16:32 | 07:22<br>16:32<br>15:42 | 08:23<br>15:42<br>15:11 | 10:12 (19) |
| 3                   | 08:48<br>15:47<br>21    | 10:20 (19)<br>10:41 (19)<br>16:46 | 08:09<br>17:49<br>19:54 | 07:04<br>17:49<br>19:54 | 06:42<br>20:56<br>21:53 | 04:31<br>21:53<br>22:06 | 04:29<br>21:22<br>22:06 | 05:16<br>21:22<br>22:06 | 06:18<br>20:07<br>18:46 | 07:18<br>18:46<br>16:29 | 07:24<br>16:29<br>15:41 | 08:25<br>15:41<br>15:11 | 10:11 (19) |
| 4                   | 08:47<br>15:49<br>21    | 10:21 (19)<br>10:42 (19)<br>16:49 | 08:07<br>17:51<br>19:58 | 07:01<br>17:51<br>19:58 | 06:39<br>20:59<br>21:01 | 04:30<br>21:54<br>22:05 | 04:30<br>21:20<br>22:05 | 05:18<br>21:20<br>22:05 | 06:20<br>20:04<br>18:44 | 07:20<br>18:44<br>16:27 | 07:26<br>16:27<br>15:40 | 08:26<br>15:40<br>15:10 | 10:10 (19) |
| 5                   | 08:47<br>15:50<br>19    | 10:22 (19)<br>10:41 (19)<br>16:51 | 08:05<br>17:53<br>19:58 | 06:59<br>17:53<br>19:58 | 06:36<br>21:01<br>21:01 | 04:29<br>21:55<br>22:05 | 04:31<br>21:18<br>22:05 | 05:20<br>21:18<br>22:05 | 06:22<br>20:02<br>18:41 | 07:22<br>18:41<br>16:25 | 07:28<br>16:25<br>15:39 | 08:28<br>15:39<br>15:10 | 10:10 (19) |
| 6                   | 08:46<br>15:52<br>18    | 10:23 (19)<br>10:41 (19)<br>16:53 | 08:03<br>17:55<br>19:58 | 06:56<br>17:55<br>19:58 | 06:34<br>21:03<br>21:03 | 04:28<br>21:56<br>22:04 | 04:32<br>21:15<br>22:04 | 05:22<br>21:15<br>22:04 | 06:24<br>19:59<br>18:38 | 07:24<br>18:38<br>16:23 | 07:30<br>16:23<br>15:38 | 08:29<br>15:38<br>15:10 | 10:09 (19) |
| 7                   | 08:46<br>15:53<br>17    | 10:24 (19)<br>10:41 (19)<br>16:55 | 08:01<br>17:57<br>19:58 | 06:53<br>17:57<br>19:58 | 06:31<br>21:05<br>21:05 | 04:27<br>21:57<br>22:03 | 04:33<br>21:13<br>22:03 | 05:24<br>21:13<br>22:03 | 06:26<br>19:56<br>18:36 | 07:26<br>18:36<br>16:21 | 07:33<br>16:21<br>15:38 | 08:31<br>15:38<br>15:10 | 10:09 (19) |
| 8                   | 08:45<br>15:55<br>15    | 10:25 (19)<br>10:40 (19)<br>16:57 | 07:59<br>17:59<br>19:59 | 06:51<br>17:59<br>19:59 | 06:28<br>21:07<br>21:07 | 05:15<br>21:59<br>22:02 | 04:27<br>21:59<br>22:02 | 05:26<br>21:11<br>22:02 | 06:28<br>19:54<br>18:33 | 07:28<br>18:33<br>16:19 | 07:35<br>16:19<br>15:37 | 08:32<br>15:37<br>15:10 | 10:09 (19) |
| 9                   | 08:45<br>15:56<br>14    | 10:26 (19)<br>10:40 (19)<br>17:00 | 07:56<br>18:02<br>20:06 | 06:48<br>18:02<br>20:06 | 06:26<br>21:09<br>22:00 | 05:13<br>22:00<br>22:01 | 04:26<br>22:01<br>22:01 | 05:28<br>21:09<br>22:01 | 06:30<br>19:51<br>18:31 | 07:31<br>18:31<br>16:17 | 07:37<br>16:17<br>15:37 | 08:34<br>15:37<br>15:10 | 10:09 (19) |
| 10                  | 08:44<br>15:58<br>11    | 10:28 (19)<br>10:39 (19)<br>17:02 | 07:54<br>18:04<br>20:09 | 06:46<br>18:04<br>20:09 | 06:23<br>21:11<br>22:01 | 05:10<br>22:01<br>22:01 | 04:25<br>22:01<br>22:01 | 05:30<br>21:07<br>22:01 | 06:32<br>19:48<br>18:28 | 07:33<br>18:28<br>16:15 | 07:39<br>16:15<br>15:36 | 08:35<br>15:36<br>15:10 | 10:10 (19) |
| 11                  | 08:43<br>15:59<br>8     | 10:30 (19)<br>10:38 (19)<br>17:04 | 07:52<br>18:06<br>20:11 | 06:43<br>18:06<br>20:11 | 06:20<br>21:13<br>22:02 | 05:08<br>22:02<br>21:59 | 04:25<br>22:02<br>21:59 | 05:32<br>21:04<br>22:02 | 06:34<br>19:46<br>18:25 | 07:35<br>18:25<br>16:13 | 07:41<br>16:13<br>15:36 | 08:36<br>15:36<br>15:10 | 10:09 (19) |
| 12                  | 08:42<br>16:01<br>08:41 | 10:38 (19)<br>17:06<br>17:48      | 07:50<br>18:08<br>18:38 | 06:18<br>18:08<br>18:38 | 06:18<br>21:15<br>21:15 | 04:24<br>22:02<br>21:58 | 04:39<br>21:02<br>21:58 | 05:34<br>21:02<br>21:58 | 06:36<br>19:43<br>18:23 | 07:37<br>18:23<br>16:11 | 07:43<br>16:11<br>15:35 | 08:38<br>15:35<br>15:10 | 10:09 (19) |
| 13                  | 08:41<br>16:03<br>08:40 | 17:09<br>17:45<br>17:11           | 18:10<br>18:35<br>18:12 | 20:15<br>18:35<br>18:12 | 21:17<br>18:12<br>20:17 | 22:03<br>18:12<br>21:19 | 21:57<br>18:12<br>21:56 | 21:00<br>18:12<br>21:56 | 19:40<br>18:20<br>18:18 | 18:20<br>16:09<br>16:07 | 17:41<br>16:09<br>16:07 | 15:35<br>16:07<br>15:35 | 10:10 (19) |
| 14                  | 08:40<br>16:05<br>08:39 | 17:11<br>18:12<br>18:12           | 18:12<br>18:32<br>18:14 | 20:17<br>18:32<br>18:14 | 21:19<br>18:12<br>20:19 | 22:04<br>18:12<br>21:21 | 21:56<br>18:12<br>21:55 | 20:57<br>18:12<br>21:55 | 19:38<br>18:18<br>18:15 | 18:18<br>16:07<br>16:05 | 17:43<br>16:07<br>16:05 | 15:35<br>16:05<br>15:35 | 10:10 (19) |
| 15                  | 08:39<br>16:07<br>08:38 | 17:13<br>18:14<br>18:14           | 18:14<br>18:34<br>18:14 | 20:19<br>18:34<br>18:14 | 21:21<br>18:14<br>20:19 | 22:05<br>18:14<br>21:55 | 21:55<br>18:14<br>21:55 | 20:55<br>18:14<br>21:55 | 19:35<br>18:15<br>18:15 | 18:15<br>16:05<br>16:05 | 17:45<br>16:05<br>16:05 | 15:35<br>16:05<br>15:35 | 10:11 (19) |
| 16                  | 08:38<br>16:08<br>08:37 | 17:15<br>18:16<br>18:16           | 18:16<br>18:36<br>18:16 | 20:21<br>18:36<br>18:16 | 21:22<br>18:16<br>20:21 | 22:05<br>18:16<br>21:53 | 21:53<br>18:16<br>21:53 | 20:53<br>18:16<br>21:53 | 19:32<br>18:12<br>18:12 | 18:12<br>16:04<br>16:04 | 17:47<br>16:04<br>16:04 | 15:35<br>16:04<br>15:35 | 10:11 (19) |
| 17                  | 08:37<br>16:10<br>08:35 | 17:18<br>18:18<br>18:18           | 18:18<br>18:38<br>18:18 | 20:23<br>18:38<br>18:18 | 21:24<br>18:18<br>20:23 | 22:06<br>18:18<br>21:52 | 21:52<br>18:18<br>21:52 | 20:50<br>18:18<br>21:52 | 19:29<br>18:10<br>18:10 | 18:10<br>16:02<br>16:02 | 17:54<br>16:02<br>16:02 | 15:35<br>16:02<br>15:35 | 10:11 (19) |
| 18                  | 08:35<br>16:12<br>08:34 | 17:20<br>18:21<br>18:21           | 18:21<br>18:41<br>18:21 | 20:25<br>18:41<br>18:21 | 21:26<br>18:21<br>20:25 | 22:06<br>18:21<br>21:50 | 21:50<br>18:21<br>21:50 | 20:48<br>18:21<br>21:50 | 19:27<br>18:07<br>18:07 | 18:07<br>16:00<br>16:00 | 17:58<br>16:00<br>16:00 | 15:35<br>16:00<br>15:35 | 10:12 (19) |
| 19                  | 08:34<br>16:14<br>08:33 | 17:22<br>18:23<br>18:23           | 18:23<br>18:43<br>18:23 | 20:27<br>18:43<br>18:23 | 21:28<br>18:23<br>20:27 | 22:07<br>18:23<br>21:49 | 21:49<br>18:23<br>21:49 | 20:45<br>18:23<br>21:49 | 19:24<br>18:05<br>18:05 | 18:05<br>16:02<br>16:02 | 17:51<br>16:02<br>16:02 | 15:35<br>16:02<br>15:35 | 10:12 (19) |
| 20                  | 08:33<br>16:16<br>08:31 | 17:24<br>18:25<br>18:25           | 18:25<br>18:45<br>18:25 | 20:29<br>18:45<br>18:25 | 21:30<br>18:25<br>20:29 | 22:07<br>18:25<br>21:47 | 21:47<br>18:25<br>21:47 | 20:43<br>18:25<br>21:47 | 19:21<br>18:02<br>18:02 | 18:02<br>16:02<br>16:02 | 17:54<br>16:02<br>16:02 | 15:35<br>16:02<br>15:35 | 10:12 (19) |
| 21                  | 08:31<br>16:18<br>08:30 | 17:27<br>18:28<br>18:28           | 18:28<br>18:48<br>18:28 | 20:31<br>18:48<br>18:28 | 21:32<br>18:28<br>20:31 | 22:08<br>18:28<br>21:46 | 21:46<br>18:28<br>21:46 | 20:40<br>18:28<br>21:46 | 19:19<br>18:00<br>18:00 | 18:00<br>16:02<br>16:02 | 17:56<br>16:02<br>16:02 | 15:35<br>16:02<br>15:35 | 10:13 (19) |
| 22                  | 08:30<br>16:20<br>08:28 | 17:29<br>18:30<br>18:30           | 18:30<br>18:50<br>18:30 | 20:34<br>18:50<br>18:30 | 21:34<br>18:30<br>20:34 | 22:08<br>18:30<br>21:44 | 21:44<br>18:30<br>21:44 | 20:38<br>18:30<br>21:44 | 19:16<br>17:57<br>17:57 | 17:57<br>16:02<br>16:02 | 17:54<br>16:02<br>16:02 | 15:36<br>16:02<br>15:36 | 10:13 (19) |
| 23                  | 08:28<br>16:22<br>08:27 | 17:31<br>18:32<br>18:32           | 18:32<br>18:52<br>18:32 | 20:36<br>18:52<br>18:32 | 21:35<br>18:32<br>20:36 | 22:08<br>18:32<br>21:43 | 21:43<br>18:32<br>21:43 | 20:35<br>18:32<br>21:43 | 19:13<br>17:55<br>17:55 | 17:55<br>16:02<br>16:02 | 17:52<br>16:02<br>16:02 | 15:37<br>16:02<br>15:37 | 10:14 (19) |
| 24                  | 08:27<br>16:24<br>08:25 | 17:33<br>18:34<br>18:34           | 18:34<br>18:54<br>18:34 | 20:38<br>18:54<br>18:34 | 21:37<br>18:34<br>20:38 | 22:08<br>18:34<br>21:41 | 21:41<br>18:34<br>21:41 | 20:33<br>18:34<br>21:41 | 19:11<br>17:53<br>17:53 | 17:53<br>16:02<br>16:02 | 17:51<br>16:02<br>16:02 | 15:38<br>16:02<br>15:38 | 10:14 (19) |
| 25                  | 08:25<br>16:27<br>08:24 | 17:35<br>18:36<br>18:36           | 18:36<br>18:56<br>18:36 | 20:40<br>18:56<br>18:36 | 21:39<br>18:36<br>20:40 | 22:08<br>18:36<br>21:39 | 21:39<br>18:36<br>21:39 | 20:30<br>18:36<br>21:39 | 19:08<br>17:50<br>17:50 | 17:50<br>16:02<br>16:02 | 17:48<br>16:02<br>16:02 | 15:38<br>16:02<br>15:38 | 10:14 (19) |
| 26                  | 08:24<br>16:29<br>08:22 | 17:38<br>18:39<br>18:39           | 18:39<br>18:59<br>18:39 | 20:42<br>18:59<br>18:39 | 21:40<br>18:39<br>20:42 | 22:08<br>18:39<br>21:37 | 21:37<br>18:39<br>21:37 | 20:28<br>18:39<br>21:37 | 19:05<br>17:48<br>17:48 | 17:48<br>16:02<br>16:02 | 17:46<br>16:02<br>16:02 | 15:39<br>16:02<br>15:39 | 10:15 (19) |
| 27                  | 08:22<br>16:31<br>08:20 | 17:40<br>18:41<br>18:41           | 18:41<br>19:01<br>18:41 | 20:44<br>19:01<br>18:41 | 21:42<br>18:41<br>20:44 | 22:08<br>18:41<br>21:36 | 21:36<br>18:41<br>21:36 | 20:25<br>18:41<br>21:36 | 19:02<br>17:45<br>17:45 | 17:45<br>16:02<br>16:02 | 17:47<br>16:02<br>16:02 | 15:40<br>16:02<br>15:40 | 10:16 (19) |
| 28                  | 08:20<br>16:33<br>08:18 | 17:42<br>18:43<br>18:43           | 18:43<br>19:03<br>18:43 | 20:46<br>19:03<br>18:43 | 21:44<br>18:43<br>20:46 | 22:08<br>18:43<br>21:34 | 21:34<br>18:43<br>21:34 | 20:23<br>18:43<br>21:34 | 19:00<br>17:43<br>17:43 | 17:43<br>16:02<br>16:02 | 17:41<br>16:02<br>16:02 | 15:41<br>16:02<br>15:41 | 10:16 (19) |
| 29                  | 08:18<br>16:35<br>08:16 | 17:42<br>18:43<br>18:43           | 18:43<br>19:03<br>18:43 | 20:46<br>19:03<br>18:43 | 21:44<br>18:43<br>20:46 | 22:08<br>18:43<br>21:34 | 21:34<br>18:43<br>21:34 | 20:23<br>18:43<br>21:34 | 19:00<br>17:43<br>17:43 | 17:43<br>16:02<br>16:02 | 17:41<br>16:02<br>16:02 | 15:41<br>16:02<br>15:41 | 10:16 (19) |
| 30                  | 08:16<br>16:37<br>08:15 | 17:42<br>18:43<br>18:43           | 18:43<br>19:03<br>18:43 | 20:46<br>19:03<br>18:43 | 21:44<br>18:43<br>20:46 | 22:08<br>18:43<br>21:34 | 21:34<br>18:43<br>21:34 | 20:23<br>18:43<br>21:34 | 19:00<br>17:43<br>17:43 | 17:43<br>16:02<br>16:02 | 17:41<br>16:02<br>16:02 | 15:41<br>16:02<br>15:41 | 10:17 (19) |
| 31                  | 08:15<br>16:40          | 17:42<br>18:43                    | 18:43<br>19:03          | 20:46<br>19:03          | 21:44<br>18:43          | 22:08<br>18:43          | 21:34<br>18:43          | 20:23<br>18:43          | 19:00<br>17:43          | 17:43<br>16:02          | 17:41<br>16:02          | 15:41<br>16:02          | 10:18 (19) |
| Potential sun hours | 235                     | 265                               | 365                     | 425                     | 507                     | 529                     | 530                     | 470                     | 385                     | 324                     | 248                     | 216                     |            |
| Total, worst case   | 188                     |                                   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         | 650        |
| Sun reduction       | 0,15                    |                                   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         | 0,09       |
| Oper. time red.     | 0,94                    |                                   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         | 0,94       |
| Wind dir. red.      | 0,61                    |                                   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         | 0,61       |
| Total reduction     | 0,09                    |                                   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         | 0,05       |
| Total, real         | 17                      |                                   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         | 32         |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AG - Jaunmedni

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:53 | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:48 | 07:01<br>17:51 | 06:39<br>19:56 | 05:23<br>20:59 | 04:30<br>21:54 | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:21<br>21:01 | 04:29<br>21:55 | 04:30<br>22:05 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:47<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:58 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:54 | 07:59<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:11 | 05:08<br>21:13 | 04:25<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:03 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 | 04:44<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:22<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:45<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:24<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:09<br>16:45 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:49<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:49<br>15:42 |
| 31                  | 08:15<br>16:40 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AH - Graudini

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February  | March     | April      | May        | June      |
|---------------------|---------|-----------|-----------|------------|------------|-----------|
| 1                   | 08:48   | 08:13     | 09:28 (7) | 07:09      | 07:40 (8)  | 06:47     |
|                     | 15:45   | 16:42     | 21        | 09:49 (7)  | 17:44      | 41        |
| 2                   | 08:48   | 08:11     | 09:29 (7) | 07:06      | 08:53 (15) | 19:50     |
|                     | 15:46   | 16:44     | 19        | 09:48 (7)  | 17:46      | 33        |
| 3                   | 08:48   | 09:29 (7) | 08:09     | 09:31 (7)  | 07:04      | 07:38 (8) |
|                     | 15:47   | 09:30 (7) | 16:46     | 09:47 (7)  | 17:49      | 26        |
| 4                   | 08:47   | 09:29 (7) | 08:07     | 09:33 (7)  | 07:01      | 07:39 (8) |
|                     | 15:49   | 09:34 (7) | 16:48     | 09:44 (7)  | 17:51      | 26        |
| 5                   | 08:47   | 09:28 (7) | 08:05     |            | 06:59      | 07:38 (8) |
|                     | 15:50   | 09:35 (7) | 16:51     |            | 17:53      | 26        |
| 6                   | 08:46   | 09:27 (7) | 08:03     | 08:40 (15) | 06:56      | 08:04 (8) |
|                     | 15:51   | 09:37 (7) | 16:53     | 12         | 08:52 (15) | 17:55     |
| 7                   | 08:46   | 09:26 (7) | 08:01     | 08:38 (15) | 06:53      | 07:39 (8) |
|                     | 15:53   | 09:38 (7) | 16:55     | 17         | 08:55 (15) | 17:57     |
| 8                   | 08:45   | 09:25 (7) | 07:59     | 08:35 (15) | 06:51      | 07:39 (8) |
|                     | 15:55   | 09:39 (7) | 16:57     | 22         | 08:57 (15) | 17:59     |
| 9                   | 08:44   | 09:24 (7) | 07:56     | 08:34 (15) | 06:48      | 07:39 (8) |
|                     | 15:56   | 09:40 (7) | 17:00     | 25         | 08:59 (15) | 18:01     |
| 10                  | 08:44   | 09:23 (7) | 07:54     | 08:33 (15) | 06:46      | 07:41 (8) |
|                     | 15:58   | 09:42 (7) | 17:02     | 27         | 09:00 (15) | 18:04     |
| 11                  | 08:43   | 09:22 (7) | 07:52     | 08:32 (15) | 06:43      | 07:42 (8) |
|                     | 15:59   | 09:43 (7) | 17:04     | 29         | 09:01 (15) | 18:06     |
| 12                  | 08:42   | 09:22 (7) | 07:50     | 08:31 (15) | 06:40      | 07:44 (8) |
|                     | 16:01   | 09:44 (7) | 17:06     | 31         | 09:02 (15) | 18:08     |
| 13                  | 08:41   | 09:22 (7) | 07:48     | 08:30 (15) | 06:38      | 07:55 (8) |
|                     | 16:03   | 09:45 (7) | 17:09     | 32         | 09:02 (15) | 18:10     |
| 14                  | 08:40   | 09:21 (7) | 07:45     | 08:30 (15) | 06:35      |           |
|                     | 16:05   | 09:45 (7) | 17:11     | 33         | 09:03 (15) | 18:12     |
| 15                  | 08:39   | 09:21 (7) | 07:43     | 08:29 (15) | 06:32      |           |
|                     | 16:07   | 09:47 (7) | 17:13     | 34         | 09:03 (15) | 18:14     |
| 16                  | 08:38   | 09:22 (7) | 07:41     | 08:29 (15) | 06:30      |           |
|                     | 16:08   | 09:48 (7) | 17:15     | 35         | 09:04 (15) | 18:16     |
| 17                  | 08:37   | 09:21 (7) | 07:38     | 08:29 (15) | 06:27      |           |
|                     | 16:10   | 09:48 (7) | 17:18     | 36         | 09:05 (15) | 18:18     |
| 18                  | 08:35   | 09:22 (7) | 07:36     | 08:28 (15) | 06:24      |           |
|                     | 16:12   | 09:49 (7) | 17:20     | 36         | 09:04 (15) | 18:20     |
| 19                  | 08:34   | 09:22 (7) | 07:34     | 08:29 (15) | 06:22      |           |
|                     | 16:14   | 09:49 (7) | 17:22     | 36         | 09:05 (15) | 18:23     |
| 20                  | 08:33   | 09:21 (7) | 07:31     | 08:28 (15) | 06:19      |           |
|                     | 16:16   | 09:50 (7) | 17:24     | 36         | 09:04 (15) | 18:25     |
| 21                  | 08:31   | 09:22 (7) | 07:29     | 08:28 (15) | 06:16      |           |
|                     | 16:18   | 09:51 (7) | 17:27     | 35         | 09:03 (15) | 18:27     |
| 22                  | 08:30   | 09:22 (7) | 07:26     | 08:29 (15) | 06:14      |           |
|                     | 16:20   | 09:51 (7) | 17:29     | 34         | 09:03 (15) | 18:29     |
| 23                  | 08:28   | 09:22 (7) | 07:24     | 08:29 (15) | 06:11      |           |
|                     | 16:22   | 09:51 (7) | 17:31     | 33         | 09:02 (15) | 18:31     |
| 24                  | 08:27   | 09:22 (7) | 07:21     | 07:51 (8)  | 06:08      |           |
|                     | 16:24   | 09:51 (7) | 17:33     | 38         | 09:02 (15) | 18:33     |
| 25                  | 08:25   | 09:23 (7) | 07:19     | 07:48 (8)  | 06:06      |           |
|                     | 16:27   | 09:51 (7) | 17:35     | 41         | 09:00 (15) | 18:35     |
| 26                  | 08:23   | 09:23 (7) | 07:16     | 07:45 (8)  | 06:03      |           |
|                     | 16:29   | 09:51 (7) | 17:38     | 44         | 08:59 (15) | 18:37     |
| 27                  | 08:22   | 09:23 (7) | 07:14     | 07:43 (8)  | 06:00      |           |
|                     | 16:31   | 09:51 (7) | 17:40     | 45         | 08:58 (15) | 18:39     |
| 28                  | 08:20   | 09:24 (7) | 07:11     | 07:40 (8)  | 05:57      |           |
|                     | 16:33   | 09:51 (7) | 17:42     | 44         | 08:55 (15) | 18:41     |
| 29                  | 08:18   | 09:25 (7) |           |            | 05:55      |           |
|                     | 16:35   | 09:51 (7) |           |            | 18:44      |           |
| 30                  | 08:16   | 09:25 (7) |           |            | 06:52      |           |
|                     | 16:37   | 09:50 (7) |           |            | 19:46      |           |
| 31                  | 08:15   | 09:27 (7) |           |            | 06:49      |           |
|                     | 16:40   | 09:50 (7) |           |            | 19:48      |           |
| Potential sun hours | 235     | 265       | 365       | 425        | 507        | 529       |
| Total, worst case   | 637     | 822       | 294       |            |            |           |
| Sun reduction       | 0,15    | 0,24      | 0,39      |            |            |           |
| Oper. time red.     | 0,94    | 0,94      | 0,94      |            |            |           |
| Wind dir. red.      | 0,59    | 0,61      | 0,62      |            |            |           |
| Total reduction     | 0,09    | 0,14      | 0,23      |            |            |           |
| Total, real         | 55      | 113       | 67        |            |            |           |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AH - Graudini

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September      | October        | November            | December            |
|---------------------|----------------|----------------|----------------|----------------|---------------------|---------------------|
| 1                   | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34      | 08:02 (15)<br>15:42 |
| 2                   | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 08:23 (8)<br>16:32  | 08:03 (15)<br>15:41 |
| 3                   | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 08:20 (8)<br>16:29  | 08:04 (15)<br>15:41 |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 08:15 (8)<br>16:27  | 08:06 (15)<br>15:40 |
| 5                   | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 08:16 (8)<br>16:25  | 08:09 (15)<br>15:39 |
| 6                   | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 08:15 (8)<br>16:23  | 08:12 (15)<br>15:38 |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 08:14 (8)<br>16:21  | 08:11 (15)<br>15:37 |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 08:14 (8)<br>16:19  | 08:11 (15)<br>15:37 |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 08:13 (8)<br>16:17  | 08:10 (15)<br>15:36 |
| 10                  | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 08:13 (8)<br>16:15  | 08:09 (15)<br>15:35 |
| 11                  | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 08:12 (8)<br>16:13  | 08:08 (15)<br>15:34 |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 08:12 (8)<br>16:11  | 08:08 (15)<br>15:33 |
| 13                  | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 08:12 (8)<br>16:09  | 08:07 (15)<br>15:32 |
| 14                  | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 08:14 (8)<br>16:07  | 08:09 (15)<br>15:31 |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 08:15 (8)<br>16:05  | 08:10 (15)<br>15:30 |
| 16                  | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 08:17 (8)<br>16:04  | 08:12 (15)<br>15:29 |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 08:19 (8)<br>16:02  | 08:14 (15)<br>15:28 |
| 18                  | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 08:22 (8)<br>16:00  | 08:17 (15)<br>15:27 |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 08:22 (8)<br>15:58  | 08:18 (15)<br>15:26 |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:24 (15)<br>15:57 | 08:20 (15)<br>15:25 |
| 21                  | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:26 (15)<br>15:55 | 08:22 (15)<br>15:24 |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:28 (15)<br>15:54 | 08:24 (15)<br>15:23 |
| 23                  | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:30 (15)<br>15:52 | 08:26 (15)<br>15:22 |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 08:32 (15)<br>15:51 | 08:28 (15)<br>15:21 |
| 25                  | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:34 (15)<br>15:49 | 08:30 (15)<br>15:20 |
| 26                  | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 08:06<br>17:48 | 08:36 (15)<br>15:48 | 08:32 (15)<br>15:19 |
| 27                  | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 08:08<br>17:45 | 08:38 (15)<br>15:47 | 08:34 (15)<br>15:18 |
| 28                  | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 08:10<br>17:43 | 08:40 (15)<br>15:46 | 08:36 (15)<br>15:17 |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 08:12<br>17:41 | 08:42 (15)<br>15:45 | 08:38 (15)<br>15:16 |
| 30                  | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 08:14<br>17:38 | 08:44 (15)<br>15:43 | 08:40 (15)<br>15:15 |
| 31                  | 05:10<br>21:28 | 06:12<br>20:15 | 07:14<br>18:52 | 08:16<br>17:36 | 08:46 (15)<br>15:41 | 08:42 (15)<br>15:14 |
| Potential sun hours | 530            | 470            | 385            | 324            | 248                 | 216                 |
| Total, worst case   |                |                |                | 953            |                     | 118                 |
| Sun reduction       |                |                |                | 0,27           | 0,09                | 0,09                |
| Oper. time red.     |                |                |                | 0,94           | 0,94                | 0,94                |
| Wind dir. red.      |                |                |                | 0,61           | 0,60                | 0,59                |
| Total reduction     |                |                |                | 0,16           | 0,05                | 0,05                |
| Total, real         |                |                |                | 148            | 37                  | 6                   |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AI - Birznieki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |      |  | February   |       |    | March      |       |    | April     |       |  | May   |  |  | June  |  |  |
|---------------------|---------|------|--|------------|-------|----|------------|-------|----|-----------|-------|--|-------|--|--|-------|--|--|
| 1                   | 08:48   |      |  | 09:30 (7)  | 08:13 |    | 08:48 (15) | 07:09 |    | 08:00 (8) | 06:47 |  | 05:30 |  |  | 04:33 |  |  |
|                     | 15:45   | 10   |  | 09:40 (7)  | 16:42 | 22 | 09:10 (15) | 17:44 | 18 | 08:18 (8) | 19:50 |  | 20:52 |  |  | 21:50 |  |  |
| 2                   | 08:48   |      |  | 09:30 (7)  | 08:11 |    | 08:47 (15) | 07:06 |    | 08:01 (8) | 06:44 |  | 05:28 |  |  | 04:32 |  |  |
|                     | 15:46   | 12   |  | 09:42 (7)  | 16:44 | 24 | 09:11 (15) | 17:46 | 14 | 08:15 (8) | 19:52 |  | 20:54 |  |  | 21:51 |  |  |
| 3                   | 08:48   |      |  | 09:29 (7)  | 08:09 |    | 08:47 (15) | 07:04 |    | 08:04 (8) | 06:41 |  | 05:26 |  |  | 04:31 |  |  |
|                     | 15:47   | 13   |  | 09:42 (7)  | 16:46 | 26 | 09:13 (15) | 17:49 | 8  | 08:12 (8) | 19:54 |  | 20:56 |  |  | 21:53 |  |  |
| 4                   | 08:47   |      |  | 09:29 (7)  | 08:07 |    | 08:45 (15) | 07:01 |    |           | 06:39 |  | 05:23 |  |  | 04:30 |  |  |
|                     | 15:49   | 14   |  | 09:43 (7)  | 16:48 | 28 | 09:13 (15) | 17:51 |    |           | 19:56 |  | 20:58 |  |  | 21:54 |  |  |
| 5                   | 08:47   |      |  | 09:28 (7)  | 08:05 |    | 08:45 (15) | 06:59 |    |           | 06:36 |  | 05:21 |  |  | 04:29 |  |  |
|                     | 15:50   | 16   |  | 09:44 (7)  | 16:51 | 29 | 09:14 (15) | 17:53 |    |           | 19:58 |  | 21:01 |  |  | 21:55 |  |  |
| 6                   | 08:46   |      |  | 09:27 (7)  | 08:03 |    | 08:45 (15) | 06:56 |    |           | 06:33 |  | 05:19 |  |  | 04:28 |  |  |
|                     | 15:51   | 18   |  | 09:45 (7)  | 16:53 | 29 | 09:14 (15) | 17:55 |    |           | 20:00 |  | 21:03 |  |  | 21:56 |  |  |
| 7                   | 08:46   |      |  | 09:26 (7)  | 08:01 |    | 08:45 (15) | 06:53 |    |           | 06:31 |  | 05:17 |  |  | 04:27 |  |  |
|                     | 15:53   | 19   |  | 09:45 (7)  | 16:55 | 30 | 09:15 (15) | 17:57 |    |           | 20:02 |  | 21:05 |  |  | 21:57 |  |  |
| 8                   | 08:45   |      |  | 09:25 (7)  | 07:59 |    | 08:44 (15) | 06:51 |    |           | 06:28 |  | 05:15 |  |  | 04:27 |  |  |
|                     | 15:55   | 21   |  | 09:46 (7)  | 16:57 | 31 | 09:15 (15) | 17:59 |    |           | 20:04 |  | 21:07 |  |  | 21:59 |  |  |
| 9                   | 08:45   |      |  | 09:24 (7)  | 07:56 |    | 08:45 (15) | 06:48 |    |           | 06:26 |  | 05:13 |  |  | 04:26 |  |  |
|                     | 15:56   | 23   |  | 09:47 (7)  | 17:00 | 30 | 09:15 (15) | 18:01 |    |           | 20:06 |  | 21:09 |  |  | 22:00 |  |  |
| 10                  | 08:44   |      |  | 09:25 (7)  | 07:54 |    | 08:45 (15) | 06:46 |    |           | 06:23 |  | 05:10 |  |  | 04:25 |  |  |
|                     | 15:58   | 22   |  | 09:47 (7)  | 17:02 | 31 | 09:16 (15) | 18:04 |    |           | 20:08 |  | 21:11 |  |  | 22:01 |  |  |
| 11                  | 08:43   |      |  | 09:25 (7)  | 07:52 |    | 08:45 (15) | 06:43 |    |           | 06:20 |  | 05:08 |  |  | 04:25 |  |  |
|                     | 15:59   | 23   |  | 09:48 (7)  | 17:04 | 30 | 09:15 (15) | 18:06 |    |           | 20:11 |  | 21:13 |  |  | 22:02 |  |  |
| 12                  | 08:42   |      |  | 09:25 (7)  | 07:50 |    | 08:46 (15) | 06:40 |    |           | 06:18 |  | 05:06 |  |  | 04:24 |  |  |
|                     | 16:01   | 24   |  | 09:49 (7)  | 17:06 | 29 | 09:15 (15) | 18:08 |    |           | 20:13 |  | 21:15 |  |  | 22:02 |  |  |
| 13                  | 08:41   |      |  | 09:26 (7)  | 07:48 |    | 08:45 (15) | 06:38 |    |           | 06:15 |  | 05:04 |  |  | 04:24 |  |  |
|                     | 16:03   | 24   |  | 09:50 (7)  | 17:09 | 29 | 09:14 (15) | 18:10 |    |           | 20:15 |  | 21:17 |  |  | 22:03 |  |  |
| 14                  | 08:40   |      |  | 09:25 (7)  | 07:45 |    | 08:46 (15) | 06:35 |    |           | 06:12 |  | 05:02 |  |  | 04:23 |  |  |
|                     | 16:05   | 25   |  | 09:50 (7)  | 17:11 | 28 | 09:14 (15) | 18:12 |    |           | 20:17 |  | 21:19 |  |  | 22:04 |  |  |
| 15                  | 08:39   |      |  | 09:26 (7)  | 07:43 |    | 08:48 (15) | 06:32 |    |           | 06:10 |  | 05:00 |  |  | 04:23 |  |  |
|                     | 16:07   | 25   |  | 09:51 (7)  | 17:13 | 25 | 09:13 (15) | 18:14 |    |           | 20:19 |  | 21:21 |  |  | 22:05 |  |  |
| 16                  | 08:38   |      |  | 09:27 (7)  | 07:41 |    | 08:11 (8)  | 06:30 |    |           | 06:07 |  | 04:58 |  |  | 04:23 |  |  |
|                     | 16:08   | 25   |  | 09:52 (7)  | 17:15 | 26 | 09:12 (15) | 18:16 |    |           | 20:21 |  | 21:22 |  |  | 22:05 |  |  |
| 17                  | 08:37   |      |  | 09:26 (7)  | 07:38 |    | 08:09 (8)  | 06:27 |    |           | 06:05 |  | 04:56 |  |  | 04:22 |  |  |
|                     | 16:10   | 25   |  | 09:51 (7)  | 17:18 | 29 | 09:11 (15) | 18:18 |    |           | 20:23 |  | 21:24 |  |  | 22:06 |  |  |
| 18                  | 08:35   |      |  | 09:27 (7)  | 07:36 |    | 08:06 (8)  | 06:24 |    |           | 06:02 |  | 04:55 |  |  | 04:22 |  |  |
|                     | 16:12   | 25   |  | 09:52 (7)  | 17:20 | 30 | 09:09 (15) | 18:21 |    |           | 20:25 |  | 21:26 |  |  | 22:06 |  |  |
| 19                  | 08:34   |      |  | 09:27 (7)  | 07:34 |    | 08:04 (8)  | 06:22 |    |           | 06:00 |  | 04:53 |  |  | 04:22 |  |  |
|                     | 16:14   | 25   |  | 09:52 (7)  | 17:22 | 29 | 09:07 (15) | 18:23 |    |           | 20:27 |  | 21:28 |  |  | 22:07 |  |  |
| 20                  | 08:33   |      |  | 09:27 (7)  | 07:31 |    | 08:01 (8)  | 06:19 |    |           | 05:57 |  | 04:51 |  |  | 04:22 |  |  |
|                     | 16:16   | 25   |  | 09:52 (7)  | 17:24 | 20 | 09:00 (15) | 18:25 |    |           | 20:29 |  | 21:30 |  |  | 22:07 |  |  |
| 21                  | 08:31   |      |  | 09:29 (7)  | 07:29 |    | 07:58 (8)  | 06:16 |    |           | 05:55 |  | 04:49 |  |  | 04:22 |  |  |
|                     | 16:18   | 24   |  | 09:53 (7)  | 17:27 | 22 | 08:20 (8)  | 18:27 |    |           | 20:31 |  | 21:32 |  |  | 22:08 |  |  |
| 22                  | 08:30   |      |  | 09:29 (7)  | 07:26 |    | 07:58 (8)  | 06:14 |    |           | 05:52 |  | 04:48 |  |  | 04:23 |  |  |
|                     | 16:20   | 23   |  | 09:52 (7)  | 17:29 | 23 | 08:21 (8)  | 18:29 |    |           | 20:34 |  | 21:34 |  |  | 22:08 |  |  |
| 23                  | 08:28   |      |  | 09:30 (7)  | 07:24 |    | 07:57 (8)  | 06:11 |    |           | 05:50 |  | 04:46 |  |  | 04:23 |  |  |
|                     | 16:22   | 22   |  | 09:52 (7)  | 17:31 | 24 | 08:21 (8)  | 18:31 |    |           | 20:36 |  | 21:35 |  |  | 22:08 |  |  |
| 24                  | 08:27   |      |  | 09:30 (7)  | 07:21 |    | 07:58 (8)  | 06:08 |    |           | 05:47 |  | 04:44 |  |  | 04:23 |  |  |
|                     | 16:24   | 22   |  | 09:52 (7)  | 17:33 | 24 | 08:22 (8)  | 18:33 |    |           | 20:38 |  | 21:37 |  |  | 22:08 |  |  |
| 25                  | 08:25   |      |  | 09:31 (7)  | 07:19 |    | 07:57 (8)  | 06:06 |    |           | 05:45 |  | 04:43 |  |  | 04:23 |  |  |
|                     | 16:27   | 20   |  | 09:51 (7)  | 17:35 | 24 | 08:21 (8)  | 18:35 |    |           | 20:40 |  | 21:39 |  |  | 22:08 |  |  |
| 26                  | 08:23   |      |  | 09:32 (7)  | 07:16 |    | 07:57 (8)  | 06:03 |    |           | 05:42 |  | 04:41 |  |  | 04:24 |  |  |
|                     | 16:29   | 18   |  | 09:50 (7)  | 17:38 | 23 | 08:20 (8)  | 18:37 |    |           | 20:42 |  | 21:40 |  |  | 22:08 |  |  |
| 27                  | 08:22   |      |  | 09:33 (7)  | 07:14 |    | 07:58 (8)  | 06:00 |    |           | 05:40 |  | 04:40 |  |  | 04:24 |  |  |
|                     | 16:31   | 16   |  | 09:49 (7)  | 17:40 | 22 | 08:20 (8)  | 18:39 |    |           | 20:44 |  | 21:42 |  |  | 22:08 |  |  |
| 28                  | 08:20   |      |  | 08:55 (15) | 07:11 |    | 07:59 (8)  | 05:58 |    |           | 05:37 |  | 04:38 |  |  | 04:25 |  |  |
|                     | 16:33   | 19   |  | 09:48 (7)  | 17:42 | 19 | 08:18 (8)  | 18:41 |    |           | 20:46 |  | 21:44 |  |  | 22:08 |  |  |
| 29                  | 08:18   |      |  | 08:52 (15) |       |    |            | 05:55 |    |           | 05:35 |  | 04:37 |  |  | 04:25 |  |  |
|                     | 16:35   | 20   |  | 09:46 (7)  |       |    |            | 18:44 |    |           | 20:48 |  | 21:45 |  |  | 22:07 |  |  |
| 30                  | 08:16   |      |  | 08:50 (15) |       |    |            | 06:52 |    |           | 05:33 |  | 04:36 |  |  | 04:26 |  |  |
|                     | 16:37   | 17   |  | 09:07 (15) |       |    |            | 19:46 |    |           | 20:50 |  | 21:47 |  |  | 22:07 |  |  |
| 31                  | 08:15   |      |  | 08:49 (15) |       |    |            | 06:49 |    |           |       |  | 04:35 |  |  |       |  |  |
|                     | 16:40   | 20   |  | 09:09 (15) |       |    |            | 19:48 |    |           |       |  | 21:48 |  |  |       |  |  |
| Potential sun hours | 235     |      |  |            | 265   |    |            | 365   |    |           | 425   |  | 507   |  |  | 529   |  |  |
| Total, worst case   |         | 635  |  |            | 736   |    |            | 40    |    |           |       |  |       |  |  |       |  |  |
| Sun reduction       |         | 0,15 |  |            | 0,24  |    |            | 0,39  |    |           |       |  |       |  |  |       |  |  |
| Oper. time red.     |         | 0,94 |  |            | 0,94  |    |            | 0,94  |    |           |       |  |       |  |  |       |  |  |
| Wind dir. red.      |         | 0,60 |  |            | 0,60  |    |            | 0,62  |    |           |       |  |       |  |  |       |  |  |
| Total reduction     |         | 0,09 |  |            | 0,14  |    |            | 0,23  |    |           |       |  |       |  |  |       |  |  |
| Total, real         |         | 55   |  |            | 100   |    |            | 9     |    |           |       |  |       |  |  |       |  |  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AI - Birznieki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | July           | August         | September      | October        | November                 | December                 |
|---------------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|
| 1                   | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34           | 08:14 (15)<br>15:42      |
| 2                   | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32           | 08:15 (15)<br>15:41      |
| 3                   | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29           | 08:14 (15)<br>15:41      |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27           | 08:14 (15)<br>15:40      |
| 5                   | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25           | 08:15 (15)<br>15:39      |
| 6                   | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23           | 08:15 (15)<br>15:38      |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21           | 08:16 (15)<br>15:38      |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19           | 08:16 (15)<br>15:37      |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17           | 08:17 (15)<br>15:36      |
| 10                  | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15           | 08:18 (15)<br>15:36      |
| 11                  | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 08:38 (8)<br>08:46 (8)   | 08:19 (15)<br>08:40 (15) |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 08:43 (8)<br>08:49 (8)   | 08:21 (15)<br>08:40 (15) |
| 13                  | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 08:33 (8)<br>08:50 (8)   | 08:23 (15)<br>09:16 (7)  |
| 14                  | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 08:32 (8)<br>08:52 (8)   | 08:25 (15)<br>09:19 (7)  |
| 15                  | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 08:31 (8)<br>08:52 (8)   | 09:07 (7)<br>09:22 (7)   |
| 16                  | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 08:30 (8)<br>08:52 (8)   | 09:06 (7)<br>09:23 (7)   |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 08:29 (8)<br>08:52 (8)   | 09:06 (7)<br>09:25 (7)   |
| 18                  | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 08:29 (8)<br>08:53 (8)   | 09:05 (7)<br>09:26 (7)   |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 08:29 (8)<br>08:53 (8)   | 09:04 (7)<br>09:26 (7)   |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:02 | 08:29 (8)<br>08:52 (8)   | 09:04 (7)<br>09:27 (7)   |
| 21                  | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:29 (8)<br>08:51 (8)   | 09:04 (7)<br>09:28 (7)   |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:31 (8)<br>08:51 (8)   | 09:04 (7)<br>09:28 (7)   |
| 23                  | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:33 (8)<br>09:35 (15)  | 09:04 (7)<br>09:28 (7)   |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:35 (8)<br>09:38 (15)  | 09:05 (7)<br>09:29 (7)   |
| 25                  | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:38 (8)<br>09:40 (15)  | 09:05 (7)<br>09:30 (7)   |
| 26                  | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 07:40 (8)<br>08:41 (15)  | 09:05 (7)<br>09:30 (7)   |
| 27                  | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:09<br>16:45 | 08:17 (15)<br>08:42 (15) | 09:05 (7)<br>09:30 (7)   |
| 28                  | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16 (15)<br>08:43 (15) | 09:05 (7)<br>09:30 (7)   |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:15 (15)<br>08:44 (15) | 09:06 (7)<br>09:30 (7)   |
| 30                  | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:15 (15)<br>08:44 (15) | 09:06 (7)<br>09:30 (7)   |
| 31                  | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 | 08:15 (15)<br>08:45 (15) | 08:48<br>15:43           |
| Potential sun hours | 530            | 470            | 385            | 324            | 248                      | 216                      |
| Total, worst case   |                |                |                | 492            | 725                      | 304                      |
| Sun reduction       |                |                |                | 0,27           | 0,09                     | 0,09                     |
| Oper. time red.     |                |                |                | 0,94           | 0,94                     | 0,94                     |
| Wind dir. red.      |                |                |                | 0,61           | 0,59                     | 0,60                     |
| Total reduction     |                |                |                | 0,15           | 0,05                     | 0,05                     |
| Total, real         |                |                |                | 76             | 37                       | 15                       |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AJ - Irbites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:41 |
| 3                   | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:53 | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:48 | 07:01<br>17:51 | 06:39<br>19:56 | 05:23<br>20:59 | 04:30<br>21:54 | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:21<br>21:01 | 04:29<br>21:55 | 04:30<br>22:05 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:47<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:58 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:54 | 07:59<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:26<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:12<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:10<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:11 | 05:08<br>21:13 | 04:25<br>22:02 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:03 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:19 | 04:23<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 | 04:44<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:10 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:22<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:45<br>15:35 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:08 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:22<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                  | 08:24<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 07:09<br>16:45 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:08 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:49<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:49<br>15:42 |
| 31                  | 08:15<br>16:40 |                | 06:49<br>19:48 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AK - Ruki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February     | March        | April         | May           | June         |
|---------------------|---------|--------------|--------------|---------------|---------------|--------------|
| 1                   | 08:48   | 08:13        | 09:22 (7)    | 07:09         | 07:39 (8)     | 06:47        |
|                     | 15:45   | 16:42        | 23 09:45 (7) | 17:44         | 42 08:50 (15) | 19:50        |
| 2                   | 08:48   | 08:11        | 09:23 (7)    | 07:06         | 07:38 (8)     | 06:44        |
|                     | 15:46   | 16:44        | 21 09:44 (7) | 17:46         | 36 08:46 (15) | 19:52        |
| 3                   | 08:48   | 08:09        | 09:25 (7)    | 07:04         | 07:37 (8)     | 06:41        |
|                     | 15:47   | 16:46        | 19 09:44 (7) | 17:49         | 25 08:02 (8)  | 19:54        |
| 4                   | 08:47   | 08:07        | 09:26 (7)    | 07:01         | 07:37 (8)     | 06:39        |
|                     | 15:49   | 16:48        | 15 09:41 (7) | 17:51         | 26 08:03 (8)  | 19:56        |
| 5                   | 08:47   | 08:05        | 09:29 (7)    | 06:59         | 07:36 (8)     | 06:36        |
|                     | 15:50   | 16:51        | 10 09:39 (7) | 17:53         | 26 08:02 (8)  | 19:58        |
| 6                   | 08:46   | 08:03        | 08:56        | 06:56         | 07:36 (8)     | 06:33        |
|                     | 15:52   | 16:53        | 25 17:55     | 08:01 (8)     | 20:00         | 21:03        |
| 7                   | 08:46   | 09:26 (7)    | 08:01        | 08:38 (15)    | 06:53         | 07:37 (8)    |
|                     | 15:53   | 1 09:27 (7)  | 16:55        | 8 08:46 (15)  | 17:57         | 25 08:02 (8) |
| 8                   | 08:45   | 09:25 (7)    | 07:59        | 08:34 (15)    | 06:51         | 07:37 (8)    |
|                     | 15:55   | 5 09:30 (7)  | 16:57        | 15 08:49 (15) | 17:59         | 23 08:00 (8) |
| 9                   | 08:44   | 09:24 (7)    | 07:56        | 08:32 (15)    | 06:48         | 07:37 (8)    |
|                     | 15:56   | 8 09:32 (7)  | 17:00        | 20 08:52 (15) | 18:01         | 22 07:59 (8) |
| 10                  | 08:44   | 09:23 (7)    | 07:54        | 08:31 (15)    | 06:46         | 07:39 (8)    |
|                     | 15:58   | 11 09:34 (7) | 17:02        | 23 08:54 (15) | 18:04         | 19 07:58 (8) |
| 11                  | 08:43   | 09:22 (7)    | 07:52        | 08:29 (15)    | 06:43         | 07:40 (8)    |
|                     | 15:59   | 13 09:35 (7) | 17:04        | 26 08:55 (15) | 18:06         | 16 07:56 (8) |
| 12                  | 08:42   | 09:21 (7)    | 07:50        | 08:28 (15)    | 06:40         | 07:42 (8)    |
|                     | 16:01   | 16 09:37 (7) | 17:06        | 28 08:56 (15) | 18:08         | 11 07:53 (8) |
| 13                  | 08:41   | 09:20 (7)    | 07:48        | 08:27 (15)    | 06:38         | 06:15        |
|                     | 16:03   | 18 09:38 (7) | 17:09        | 29 08:56 (15) | 18:10         | 20:15        |
| 14                  | 08:40   | 09:18 (7)    | 07:45        | 08:26 (15)    | 06:35         | 06:12        |
|                     | 16:05   | 21 09:39 (7) | 17:11        | 32 08:58 (15) | 18:12         | 20:17        |
| 15                  | 08:39   | 09:18 (7)    | 07:43        | 08:26 (15)    | 06:32         | 06:10        |
|                     | 16:07   | 22 09:40 (7) | 17:13        | 33 08:59 (15) | 18:14         | 20:19        |
| 16                  | 08:38   | 09:18 (7)    | 07:41        | 08:25 (15)    | 06:30         | 06:07        |
|                     | 16:08   | 24 09:42 (7) | 17:15        | 34 08:59 (15) | 18:16         | 20:21        |
| 17                  | 08:37   | 09:17 (7)    | 07:38        | 08:25 (15)    | 06:27         | 06:05        |
|                     | 16:10   | 25 09:42 (7) | 17:18        | 34 08:59 (15) | 18:18         | 20:23        |
| 18                  | 08:35   | 09:18 (7)    | 07:36        | 08:25 (15)    | 06:24         | 06:02        |
|                     | 16:12   | 25 09:43 (7) | 17:20        | 34 08:59 (15) | 18:21         | 20:25        |
| 19                  | 08:34   | 09:17 (7)    | 07:34        | 08:25 (15)    | 06:22         | 06:00        |
|                     | 16:14   | 27 09:44 (7) | 17:22        | 35 09:00 (15) | 18:23         | 20:27        |
| 20                  | 08:33   | 09:17 (7)    | 07:31        | 08:24 (15)    | 06:19         | 05:57        |
|                     | 16:16   | 27 09:44 (7) | 17:24        | 35 08:59 (15) | 18:25         | 20:29        |
| 21                  | 08:31   | 09:18 (7)    | 07:29        | 08:24 (15)    | 06:16         | 05:55        |
|                     | 16:18   | 27 09:45 (7) | 17:27        | 34 08:58 (15) | 18:27         | 20:31        |
| 22                  | 08:30   | 09:18 (7)    | 07:26        | 08:25 (15)    | 06:14         | 05:52        |
|                     | 16:20   | 27 09:45 (7) | 17:29        | 34 08:59 (15) | 18:29         | 20:34        |
| 23                  | 08:28   | 09:18 (7)    | 07:24        | 08:25 (15)    | 06:11         | 05:50        |
|                     | 16:22   | 28 09:46 (7) | 17:31        | 33 08:58 (15) | 18:31         | 20:36        |
| 24                  | 08:27   | 09:18 (7)    | 07:21        | 08:26 (15)    | 06:08         | 05:47        |
|                     | 16:24   | 28 09:46 (7) | 17:33        | 31 08:57 (15) | 18:33         | 20:38        |
| 25                  | 08:25   | 09:18 (7)    | 07:19        | 07:48 (8)     | 06:06         | 05:45        |
|                     | 16:27   | 28 09:46 (7) | 17:35        | 38 08:56 (15) | 18:35         | 20:40        |
| 26                  | 08:23   | 09:18 (7)    | 07:16        | 07:45 (8)     | 06:03         | 05:42        |
|                     | 16:29   | 28 09:46 (7) | 17:38        | 42 08:55 (15) | 18:37         | 20:42        |
| 27                  | 08:22   | 09:18 (7)    | 07:14        | 07:43 (8)     | 06:00         | 05:40        |
|                     | 16:31   | 28 09:46 (7) | 17:40        | 43 08:54 (15) | 18:39         | 20:44        |
| 28                  | 08:20   | 09:19 (7)    | 07:11        | 07:40 (8)     | 05:58         | 05:37        |
|                     | 16:33   | 27 09:46 (7) | 17:42        | 44 08:52 (15) | 18:41         | 20:46        |
| 29                  | 08:18   | 09:19 (7)    |              | 05:55         |               | 05:35        |
|                     | 16:35   | 27 09:46 (7) |              | 18:44         |               | 20:48        |
| 30                  | 08:16   | 09:20 (7)    |              | 06:52         |               | 05:33        |
|                     | 16:37   | 26 09:46 (7) |              | 19:46         |               | 20:50        |
| 31                  | 08:15   | 09:21 (7)    |              | 06:49         |               | 04:35        |
|                     | 16:40   | 25 09:46 (7) |              | 19:48         |               | 21:48        |
| Potential sun hours | 235     | 265          | 365          | 425           | 507           | 529          |
| Total, worst case   | 542     | 773          | 296          |               |               |              |
| Sun reduction       | 0,15    | 0,24         | 0,39         |               |               |              |
| Oper. time red.     | 0,94    | 0,94         | 0,94         |               |               |              |
| Wind dir. red.      | 0,59    | 0,61         | 0,62         |               |               |              |
| Total reduction     | 0,09    | 0,14         | 0,23         |               |               |              |
| Total, real         | 46      | 106          | 67           |               |               |              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AK - Ruki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September      | October        | November           | December            |
|---------------------|----------------|----------------|----------------|----------------|--------------------|---------------------|
| 1                   | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34     | 07:59 (15)<br>15:42 |
| 2                   | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 08:20 (8)<br>16:32 | 08:23 (15)<br>15:41 |
| 3                   | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 08:18 (8)<br>16:29 | 08:03 (15)<br>15:41 |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 08:34 (8)<br>16:27 | 08:20 (15)<br>15:40 |
| 5                   | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 08:16 (8)<br>16:25 | 08:05 (15)<br>15:39 |
| 6                   | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 08:35 (8)<br>16:23 | 08:17 (15)<br>15:38 |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 08:36 (8)<br>16:21 | 08:18 (15)<br>15:37 |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 08:37 (8)<br>16:19 | 08:19 (15)<br>15:36 |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 08:38 (8)<br>16:17 | 08:20 (15)<br>15:35 |
| 10                  | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 08:12 (8)<br>16:15 | 08:21 (15)<br>15:34 |
| 11                  | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 08:11 (8)<br>16:13 | 08:22 (15)<br>15:33 |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 08:36 (8)<br>16:11 | 08:23 (15)<br>15:32 |
| 13                  | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 08:37 (8)<br>16:09 | 08:24 (15)<br>15:31 |
| 14                  | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 08:13 (8)<br>16:07 | 08:25 (15)<br>15:30 |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 08:15 (8)<br>16:05 | 08:26 (15)<br>15:29 |
| 16                  | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:12 | 08:17 (8)<br>16:04 | 08:27 (15)<br>15:28 |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 08:19 (8)<br>16:02 | 08:28 (15)<br>15:27 |
| 18                  | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 08:22 (8)<br>16:00 | 08:29 (15)<br>15:26 |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 08:24 (8)<br>15:58 | 08:30 (15)<br>15:25 |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:02 | 08:26 (8)<br>15:57 | 08:31 (15)<br>15:24 |
| 21                  | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:28 (8)<br>15:55 | 08:32 (15)<br>15:23 |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:30 (8)<br>15:54 | 08:33 (15)<br>15:22 |
| 23                  | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:32 (8)<br>15:52 | 08:34 (15)<br>15:21 |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:34 (8)<br>15:51 | 08:35 (15)<br>15:20 |
| 25                  | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:36 (8)<br>15:49 | 08:37 (15)<br>15:19 |
| 26                  | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 08:06<br>17:48 | 08:38 (8)<br>15:47 | 08:39 (15)<br>15:18 |
| 27                  | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:02 | 08:08<br>17:45 | 08:40 (8)<br>15:46 | 08:41 (15)<br>15:17 |
| 28                  | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 08:10<br>17:43 | 08:42 (8)<br>15:44 | 08:43 (15)<br>15:16 |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 08:12<br>17:41 | 08:44 (8)<br>15:43 | 08:45 (15)<br>15:15 |
| 30                  | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 08:14<br>17:38 | 08:46 (8)<br>15:41 | 08:47 (15)<br>15:14 |
| 31                  | 05:10<br>21:28 | 06:12<br>20:15 | 07:14<br>18:52 | 08:16<br>17:36 | 08:48 (8)<br>15:40 | 08:49 (15)<br>15:13 |
| Potential sun hours | 530            | 470            | 385            | 324            | 248                | 216                 |
| Total, worst case   |                |                |                | 920            | 662                | 49                  |
| Sun reduction       |                |                |                | 0,27           | 0,09               | 0,09                |
| Oper. time red.     |                |                |                | 0,94           | 0,94               | 0,94                |
| Wind dir. red.      |                |                |                | 0,61           | 0,59               | 0,59                |
| Total reduction     |                |                |                | 0,16           | 0,05               | 0,05                |
| Total, real         |                |                |                | 143            | 34                 | 2                   |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AL - Vipmali

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

| January             |       | February  |       | March |            | April |            | May   |            | June  |  |
|---------------------|-------|-----------|-------|-------|------------|-------|------------|-------|------------|-------|--|
| 1                   | 08:48 | 11:14 (1) | 08:13 | 07:09 | 07:56 (20) | 06:47 | 07:23 (18) | 05:31 | 07:12 (19) | 04:34 |  |
| 2                   | 08:48 | 11:16 (1) | 08:11 | 07:06 | 07:56 (20) | 06:44 | 07:23 (18) | 05:28 | 07:13 (19) | 04:32 |  |
| 3                   | 08:48 | 11:17 (1) | 08:09 | 07:04 | 07:56 (20) | 06:42 | 07:22 (19) | 05:26 | 07:14 (19) | 04:31 |  |
| 4                   | 08:47 | 11:21 (1) | 08:07 | 07:01 | 07:57 (20) | 06:39 | 07:19 (19) | 05:24 | 07:17 (19) | 04:30 |  |
| 5                   | 08:47 | 11:23 (1) | 08:05 | 06:59 | 07:57 (20) | 06:36 | 07:17 (19) | 05:21 | 07:21 (19) | 04:29 |  |
| 6                   | 08:46 |           | 08:03 | 06:56 | 07:58 (20) | 06:34 | 07:15 (19) | 05:19 | 07:29 (19) | 04:28 |  |
| 7                   | 08:46 |           | 08:01 | 06:53 | 07:59 (20) | 06:31 | 07:14 (19) | 05:17 |            | 04:28 |  |
| 8                   | 08:45 |           | 07:59 | 06:51 | 08:01 (20) | 06:28 | 07:12 (19) | 05:15 |            | 04:27 |  |
| 9                   | 08:44 |           | 07:56 | 06:48 | 08:18 (20) | 06:26 | 07:11 (19) | 05:13 |            | 04:26 |  |
| 10                  | 08:44 |           | 07:54 | 06:46 | 08:03 (20) | 06:26 | 07:11 (19) | 05:13 |            | 04:26 |  |
| 11                  | 08:43 |           | 07:52 | 06:43 | 08:14 (20) | 06:23 | 07:10 (19) | 05:11 |            | 04:25 |  |
| 12                  | 08:42 |           | 07:50 | 06:40 |            | 06:20 | 07:09 (19) | 05:08 |            | 04:25 |  |
| 13                  | 08:41 |           | 07:48 | 06:38 |            | 06:18 | 07:08 (19) | 05:06 |            | 04:24 |  |
| 14                  | 08:40 |           | 07:45 | 06:35 |            | 06:15 | 07:07 (19) | 05:04 |            | 04:24 |  |
| 15                  | 08:39 |           | 07:43 | 06:32 |            | 06:13 | 07:07 (19) | 05:02 |            | 04:23 |  |
| 16                  | 08:38 |           | 07:41 | 06:30 |            | 06:10 | 07:06 (19) | 05:00 |            | 04:23 |  |
| 17                  | 08:37 |           | 07:38 | 06:27 |            | 06:08 | 07:05 (19) | 04:57 |            | 04:23 |  |
| 18                  | 08:35 |           | 07:36 | 06:24 |            | 06:05 | 07:05 (19) | 04:55 |            | 04:23 |  |
| 19                  | 08:34 |           | 07:34 | 06:22 |            | 06:03 | 07:05 (19) | 04:53 |            | 04:22 |  |
| 20                  | 08:33 |           | 07:31 | 06:19 |            | 06:00 | 07:05 (19) | 04:51 |            | 04:23 |  |
| 21                  | 08:31 |           | 07:29 | 06:16 |            | 05:57 | 07:05 (19) | 04:49 |            | 04:23 |  |
| 22                  | 08:30 |           | 07:26 | 06:14 |            | 05:55 | 07:06 (19) | 04:47 |            | 04:23 |  |
| 23                  | 08:28 |           | 07:24 | 06:11 |            | 05:52 | 07:06 (19) | 04:45 |            | 04:23 |  |
| 24                  | 08:27 |           | 07:21 | 06:08 |            | 05:50 | 07:06 (19) | 04:43 |            | 04:24 |  |
| 25                  | 08:25 |           | 07:19 | 06:06 |            | 05:47 | 07:06 (19) | 04:41 |            | 04:24 |  |
| 26                  | 08:23 |           | 07:16 | 06:03 |            | 05:45 | 07:07 (19) | 04:39 |            | 04:25 |  |
| 27                  | 08:22 |           | 07:14 | 06:00 |            | 05:43 | 07:08 (19) | 04:37 |            | 04:26 |  |
| 28                  | 08:20 |           | 07:11 | 05:58 |            | 05:41 | 07:09 (19) | 04:35 |            | 04:26 |  |
| 29                  | 08:18 |           | 07:09 | 05:55 |            | 05:39 | 07:10 (19) | 04:33 |            | 04:26 |  |
| 30                  | 08:16 |           | 07:07 | 05:52 |            | 05:37 | 07:11 (19) | 04:31 |            | 04:26 |  |
| 31                  | 08:15 |           | 07:05 | 05:50 |            | 05:35 | 07:12 (19) | 04:29 |            | 04:26 |  |
| Potential sun hours | 235   |           | 265   | 365   |            | 425   |            | 507   |            | 529   |  |
| Total, worst case   | 34    |           | 278   | 386   |            | 1231  |            | 104   |            |       |  |
| Sun reduction       | 0,15  |           | 0,24  | 0,39  |            | 0,48  |            | 0,53  |            |       |  |
| Oper. time red.     | 0,94  |           | 0,94  | 0,94  |            | 0,94  |            | 0,94  |            |       |  |
| Wind dir. red.      | 0,61  |           | 0,62  | 0,64  |            | 0,66  |            | 0,66  |            |       |  |
| Total reduction     | 0,09  |           | 0,14  | 0,23  |            | 0,30  |            | 0,33  |            |       |  |
| Total, real         | 3     |           | 39    | 90    |            | 367   |            | 34    |            |       |  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AL - Vipmali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September     | October       | November      | December      |
|---------------------|-------|--------|---------------|---------------|---------------|---------------|
| 1                   | 04:27 | 05:13  | 06:14         | 07:07 (19)    | 07:14         | 07:19         |
|                     | 22:07 | 21:26  | 20:12         | 46 07:53 (19) | 18:52         | 16:34         |
| 2                   | 04:28 | 05:14  | 06:16         | 07:08 (19)    | 07:16         | 07:22         |
|                     | 22:06 | 21:24  | 20:10         | 44 07:52 (19) | 18:49         | 16:32         |
| 3                   | 04:29 | 05:16  | 06:18         | 07:08 (19)    | 07:18         | 07:24         |
|                     | 22:06 | 21:22  | 20:07         | 43 07:51 (19) | 18:46         | 16:30         |
| 4                   | 04:30 | 05:18  | 06:20         | 07:09 (19)    | 07:20         | 07:26         |
|                     | 22:05 | 21:20  | 20:04         | 41 07:50 (19) | 18:44         | 16:27         |
| 5                   | 04:31 | 05:20  | 06:22         | 07:10 (19)    | 07:22         | 08:41 (20)    |
|                     | 22:04 | 21:18  | 20:02         | 39 07:49 (19) | 18:41         | 10 08:51 (20) |
| 6                   | 04:32 | 05:22  | 06:24         | 07:11 (19)    | 07:24         | 08:37 (20)    |
|                     | 22:04 | 21:15  | 19:59         | 37 07:48 (19) | 18:38         | 17 08:54 (20) |
| 7                   | 04:33 | 05:24  | 06:26         | 07:12 (19)    | 07:26         | 08:36 (20)    |
|                     | 22:03 | 21:13  | 19:56         | 34 07:46 (19) | 18:36         | 20 08:56 (20) |
| 8                   | 04:34 | 05:26  | 07:33 (19)    | 06:28         | 07:13 (19)    | 07:28         |
|                     | 22:02 | 21:11  | 3 07:36 (19)  | 19:54         | 31 07:44 (18) | 18:33         |
| 9                   | 04:35 | 05:28  | 07:27 (19)    | 06:30         | 07:14 (19)    | 07:31         |
|                     | 22:01 | 21:09  | 15 07:42 (19) | 19:51         | 29 07:43 (18) | 18:31         |
| 10                  | 04:36 | 05:30  | 07:24 (19)    | 06:32         | 07:16 (18)    | 07:33         |
|                     | 22:00 | 21:07  | 21 07:45 (19) | 19:48         | 27 07:43 (18) | 18:28         |
| 11                  | 04:38 | 05:32  | 07:22 (19)    | 06:34         | 07:15 (18)    | 07:35         |
|                     | 21:59 | 21:04  | 26 07:48 (19) | 19:46         | 28 07:43 (18) | 18:25         |
| 12                  | 04:39 | 05:34  | 07:21 (19)    | 06:36         | 07:15 (18)    | 07:37         |
|                     | 21:58 | 21:02  | 29 07:50 (19) | 19:43         | 28 07:43 (18) | 18:23         |
| 13                  | 04:40 | 05:36  | 07:18 (19)    | 06:38         | 07:15 (18)    | 07:39         |
|                     | 21:57 | 21:00  | 32 07:50 (19) | 19:40         | 27 07:42 (18) | 18:20         |
| 14                  | 04:42 | 05:38  | 07:17 (19)    | 06:40         | 07:15 (18)    | 07:41         |
|                     | 21:56 | 20:57  | 35 07:52 (19) | 19:38         | 27 07:42 (18) | 18:18         |
| 15                  | 04:43 | 05:40  | 07:16 (19)    | 06:42         | 07:15 (18)    | 07:43         |
|                     | 21:54 | 20:55  | 37 07:53 (19) | 19:35         | 26 07:41 (18) | 18:15         |
| 16                  | 04:45 | 05:42  | 07:15 (19)    | 06:44         | 07:16 (18)    | 07:45         |
|                     | 21:53 | 20:53  | 39 07:54 (19) | 19:32         | 24 07:40 (18) | 18:13         |
| 17                  | 04:46 | 05:44  | 07:14 (19)    | 06:46         | 07:17 (18)    | 07:47         |
|                     | 21:52 | 20:50  | 41 07:55 (19) | 19:29         | 22 07:39 (18) | 18:10         |
| 18                  | 04:48 | 05:46  | 07:13 (19)    | 06:48         | 07:19 (18)    | 07:49         |
|                     | 21:50 | 20:48  | 42 07:55 (19) | 19:27         | 18 07:37 (18) | 18:07         |
| 19                  | 04:49 | 05:48  | 07:12 (19)    | 06:50         | 07:21 (18)    | 07:51         |
|                     | 21:49 | 20:45  | 44 07:56 (19) | 19:24         | 14 07:35 (18) | 18:05         |
| 20                  | 04:51 | 05:50  | 07:11 (19)    | 06:52         | 07:23 (18)    | 07:54         |
|                     | 21:47 | 20:43  | 45 07:56 (19) | 19:21         | 9 07:32 (18)  | 18:02         |
| 21                  | 04:53 | 05:52  | 07:10 (19)    | 06:54         |               | 07:56         |
|                     | 21:46 | 20:40  | 46 07:56 (19) | 19:19         |               | 18:00         |
| 22                  | 04:54 | 05:54  | 07:10 (19)    | 06:56         |               | 07:58         |
|                     | 21:44 | 20:38  | 46 07:56 (19) | 19:16         |               | 17:58         |
| 23                  | 04:56 | 05:56  | 07:09 (19)    | 06:58         |               | 08:00         |
|                     | 21:43 | 20:35  | 48 07:57 (19) | 19:13         |               | 17:55         |
| 24                  | 04:58 | 05:58  | 07:09 (19)    | 07:00         |               | 08:02         |
|                     | 21:41 | 20:33  | 48 07:57 (19) | 19:11         |               | 17:53         |
| 25                  | 05:00 | 06:00  | 07:08 (19)    | 07:02         |               | 08:04         |
|                     | 21:39 | 20:30  | 49 07:57 (19) | 19:08         |               | 17:50         |
| 26                  | 05:01 | 06:02  | 07:08 (19)    | 07:04         |               | 07:06         |
|                     | 21:37 | 20:28  | 49 07:57 (19) | 19:05         |               | 16:48         |
| 27                  | 05:03 | 06:04  | 07:08 (19)    | 07:06         |               | 07:09         |
|                     | 21:36 | 20:25  | 48 07:56 (19) | 19:02         |               | 16:46         |
| 28                  | 05:05 | 06:06  | 07:08 (19)    | 07:08         |               | 07:11         |
|                     | 21:34 | 20:23  | 48 07:56 (19) | 19:00         |               | 16:43         |
| 29                  | 05:07 | 06:08  | 07:07 (19)    | 07:10         |               | 07:13         |
|                     | 21:32 | 20:20  | 48 07:55 (19) | 18:57         |               | 16:41         |
| 30                  | 05:09 | 06:10  | 07:07 (19)    | 07:12         |               | 07:15         |
|                     | 21:30 | 20:17  | 47 07:54 (19) | 18:54         |               | 16:39         |
| 31                  | 05:11 | 06:12  | 07:07 (19)    |               |               | 07:17         |
|                     | 21:28 | 20:15  | 47 07:54 (19) |               |               | 16:36         |
| Potential sun hours | 530   | 470    | 385           | 324           | 248           | 216           |
| Total, worst case   |       |        | 594           | 505           |               | 364           |
| Sun reduction       |       | 0,51   | 0,43          | 0,27          |               | 0,09          |
| Oper. time red.     |       | 0,94   | 0,94          | 0,94          |               | 0,94          |
| Wind dir. red.      |       | 0,66   | 0,66          | 0,62          |               | 0,61          |
| Total reduction     |       | 0,32   | 0,26          | 0,16          |               | 0,05          |
| Total, real         |       | 297    | 157           | 80            |               | 18            |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AM - Galvani 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:20<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:57 | 04:31<br>21:53 | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:30<br>21:54 | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:29<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:16 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>18:00 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:37<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:02 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:52<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:08 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:38 |
| 26                  | 08:24<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:07<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:40 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 07:09<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:12<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:49<br>15:42 |
| 30                  | 08:17<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:49<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AN - Pludmales 1

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March | April        | May        | June  |
|---------------------|---------|----------|-------|--------------|------------|-------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47        | 07:14 (21) | 05:31 |
|                     | 15:45   | 16:42    | 17:44 | 19:50        | 08:05 (2)  | 20:52 |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44        | 07:12 (21) | 05:28 |
|                     | 15:46   | 16:44    | 17:46 | 19:52        | 08:01 (2)  | 20:54 |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42        | 07:09 (21) | 05:26 |
|                     | 15:48   | 16:46    | 17:49 | 19:54        | 07:24 (21) | 20:56 |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39        | 07:06 (21) | 05:24 |
|                     | 15:49   | 16:49    | 17:51 | 19:56        | 07:24 (21) | 20:58 |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36        | 07:04 (21) | 05:21 |
|                     | 15:50   | 16:51    | 17:53 | 19:58        | 07:25 (21) | 21:00 |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34        | 07:02 (21) | 05:19 |
|                     | 15:52   | 16:53    | 17:55 | 20:00        | 07:25 (21) | 21:03 |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31        | 07:02 (21) | 05:17 |
|                     | 15:53   | 16:55    | 17:57 | 20:02        | 07:25 (21) | 21:05 |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28        | 07:01 (21) | 05:15 |
|                     | 15:55   | 16:58    | 17:59 | 20:04        | 07:25 (21) | 21:07 |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26        | 07:01 (21) | 05:13 |
|                     | 15:56   | 17:00    | 18:02 | 20:06        | 07:24 (21) | 21:09 |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23        | 07:02 (21) | 05:11 |
|                     | 15:58   | 17:02    | 18:04 | 20:09        | 07:24 (21) | 21:11 |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20        | 07:01 (21) | 05:09 |
|                     | 16:00   | 17:04    | 18:06 | 20:11        | 07:22 (21) | 21:13 |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18        | 07:02 (21) | 05:07 |
|                     | 16:01   | 17:07    | 18:08 | 20:13        | 07:22 (21) | 21:15 |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15        | 07:03 (21) | 05:04 |
|                     | 16:03   | 17:09    | 18:10 | 20:15        | 07:20 (21) | 21:17 |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13        | 07:05 (21) | 05:02 |
|                     | 16:05   | 17:11    | 18:12 | 20:17        | 07:18 (21) | 21:18 |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10        | 07:07 (21) | 05:01 |
|                     | 16:07   | 17:13    | 18:14 | 20:19        | 07:15 (21) | 21:20 |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08        |            | 04:59 |
|                     | 16:09   | 17:16    | 18:16 | 11 07:08 (2) |            | 21:22 |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05        |            | 04:57 |
|                     | 16:11   | 17:18    | 18:18 | 16 07:11 (2) |            | 21:24 |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02        |            | 04:55 |
|                     | 16:12   | 17:20    | 18:21 | 20 07:12 (2) |            | 21:26 |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00        |            | 04:53 |
|                     | 16:14   | 17:22    | 18:23 | 23 07:13 (2) |            | 21:28 |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57        |            | 04:51 |
|                     | 16:16   | 17:24    | 18:25 | 25 07:15 (2) |            | 21:30 |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55        |            | 04:50 |
|                     | 16:18   | 17:27    | 18:27 | 27 07:15 (2) |            | 21:32 |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52        |            | 04:48 |
|                     | 16:21   | 17:29    | 18:29 | 28 07:15 (2) |            | 21:33 |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50        |            | 04:46 |
|                     | 16:23   | 17:31    | 18:31 | 28 07:14 (2) |            | 21:35 |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47        |            | 04:45 |
|                     | 16:25   | 17:33    | 18:33 | 29 07:15 (2) |            | 21:37 |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45        |            | 04:43 |
|                     | 16:27   | 17:36    | 18:35 | 28 07:14 (2) |            | 21:39 |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42        |            | 04:42 |
|                     | 16:29   | 17:38    | 18:37 | 28 07:13 (2) |            | 21:40 |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40        |            | 04:40 |
|                     | 16:31   | 17:40    | 18:39 | 27 07:13 (2) |            | 21:42 |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38        |            | 04:39 |
|                     | 16:33   | 17:42    | 18:41 | 26 07:12 (2) |            | 21:44 |
| 29                  | 08:18   |          | 05:55 | 05:35        |            | 04:37 |
|                     | 16:35   |          | 18:44 | 24 07:10 (2) |            | 21:45 |
| 30                  | 08:16   |          | 06:52 | 05:33        |            | 04:36 |
|                     | 16:38   |          | 19:46 | 22 08:10 (2) |            | 21:47 |
| 31                  | 08:15   |          | 06:50 | 07:49 (2)    |            | 04:35 |
|                     | 16:40   |          | 19:48 | 18 08:07 (2) |            | 21:48 |
| Potential sun hours | 235     | 265      | 365   | 425          | 507        | 528   |
| Total, worst case   |         |          | 380   |              | 287        |       |
| Sun reduction       |         |          | 0,39  |              | 0,48       |       |
| Oper. time red.     |         |          | 0,94  |              | 0,94       |       |
| Wind dir. red.      |         |          | 0,64  |              | 0,66       |       |
| Total reduction     |         |          | 0,23  |              | 0,30       |       |
| Total, real         |         |          | 89    |              | 86         |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AN - Pludmales 1

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September | October    | November | December |
|---------------------|-------|--------|-----------|------------|----------|----------|
| 1                   | 04:27 | 05:13  | 06:14     | 07:01 (21) | 07:14    | 07:19    |
|                     | 22:07 | 21:26  | 20:12     | 07:21 (21) | 18:52    | 16:34    |
| 2                   | 04:28 | 05:15  | 06:16     | 07:00 (21) | 07:16    | 07:22    |
|                     | 22:06 | 21:24  | 20:10     | 07:22 (21) | 18:49    | 16:32    |
| 3                   | 04:29 | 05:16  | 06:18     | 06:59 (21) | 07:18    | 07:24    |
|                     | 22:06 | 21:22  | 20:07     | 07:22 (21) | 18:46    | 16:30    |
| 4                   | 04:30 | 05:18  | 06:20     | 06:59 (21) | 07:20    | 07:26    |
|                     | 22:05 | 21:20  | 20:04     | 07:22 (21) | 18:44    | 16:27    |
| 5                   | 04:31 | 05:20  | 06:22     | 06:58 (21) | 07:22    | 07:28    |
|                     | 22:04 | 21:18  | 20:02     | 07:22 (21) | 18:41    | 16:25    |
| 6                   | 04:32 | 05:22  | 06:24     | 06:58 (21) | 07:24    | 07:30    |
|                     | 22:04 | 21:15  | 19:59     | 07:21 (21) | 18:39    | 16:23    |
| 7                   | 04:33 | 05:24  | 06:26     | 06:58 (21) | 07:26    | 07:32    |
|                     | 22:03 | 21:13  | 19:56     | 07:21 (21) | 18:36    | 16:21    |
| 8                   | 04:34 | 05:26  | 06:28     | 07:00 (21) | 07:28    | 07:35    |
|                     | 22:02 | 21:11  | 19:54     | 07:20 (21) | 18:33    | 16:19    |
| 9                   | 04:35 | 05:28  | 06:30     | 07:01 (21) | 07:30    | 07:37    |
|                     | 22:01 | 21:09  | 19:51     | 07:18 (21) | 18:31    | 16:17    |
| 10                  | 04:37 | 05:30  | 06:32     | 07:03 (21) | 07:33    | 07:39    |
|                     | 22:00 | 21:06  | 19:48     | 07:16 (21) | 18:28    | 16:15    |
| 11                  | 04:38 | 05:32  | 06:34     | 07:05 (21) | 07:35    | 07:41    |
|                     | 21:59 | 21:04  | 19:46     | 07:55 (2)  | 18:25    | 16:13    |
| 12                  | 04:39 | 05:34  | 06:36     | 07:07 (21) | 07:37    | 07:43    |
|                     | 21:58 | 21:02  | 19:43     | 07:58 (2)  | 18:23    | 16:11    |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39 (2)  | 07:39    | 07:45    |
|                     | 21:57 | 21:00  | 19:40     | 07:59 (2)  | 18:20    | 16:09    |
| 14                  | 04:42 | 05:38  | 06:40     | 07:38 (2)  | 07:41    | 07:47    |
|                     | 21:56 | 20:57  | 19:38     | 08:00 (2)  | 18:18    | 16:07    |
| 15                  | 04:43 | 05:40  | 06:42     | 07:36 (2)  | 07:43    | 07:50    |
|                     | 21:54 | 20:55  | 19:35     | 08:01 (2)  | 18:15    | 16:06    |
| 16                  | 04:45 | 05:42  | 06:44     | 07:35 (2)  | 07:45    | 07:52    |
|                     | 21:53 | 20:52  | 19:32     | 08:02 (2)  | 18:13    | 16:04    |
| 17                  | 04:46 | 05:44  | 06:46     | 07:35 (2)  | 07:47    | 07:54    |
|                     | 21:52 | 20:50  | 19:29     | 08:02 (2)  | 18:10    | 16:02    |
| 18                  | 04:48 | 05:46  | 06:48     | 07:34 (2)  | 07:49    | 07:56    |
|                     | 21:50 | 20:48  | 19:27     | 08:02 (2)  | 18:08    | 16:00    |
| 19                  | 04:50 | 05:48  | 06:50     | 07:33 (2)  | 07:51    | 07:58    |
|                     | 21:49 | 20:45  | 19:24     | 08:02 (2)  | 18:05    | 15:59    |
| 20                  | 04:51 | 05:50  | 06:52     | 07:33 (2)  | 07:54    | 08:00    |
|                     | 21:47 | 20:43  | 19:21     | 08:01 (2)  | 18:03    | 15:57    |
| 21                  | 04:53 | 05:52  | 06:54     | 07:33 (2)  | 07:56    | 08:02    |
|                     | 21:46 | 20:40  | 19:19     | 08:01 (2)  | 18:00    | 15:56    |
| 22                  | 04:54 | 05:54  | 06:56     | 07:33 (2)  | 07:58    | 08:04    |
|                     | 21:44 | 20:38  | 19:16     | 08:00 (2)  | 17:58    | 15:54    |
| 23                  | 04:56 | 05:56  | 06:58     | 07:33 (2)  | 08:00    | 08:06    |
|                     | 21:42 | 20:35  | 19:13     | 07:59 (2)  | 17:55    | 15:53    |
| 24                  | 04:58 | 05:58  | 07:00     | 07:33 (2)  | 08:02    | 08:08    |
|                     | 21:41 | 20:33  | 19:11     | 07:58 (2)  | 17:53    | 15:51    |
| 25                  | 05:00 | 06:00  | 07:02     | 07:34 (2)  | 08:04    | 08:10    |
|                     | 21:39 | 20:30  | 19:08     | 07:57 (2)  | 17:50    | 15:50    |
| 26                  | 05:02 | 06:02  | 07:04     | 07:35 (2)  | 07:06    | 08:12    |
|                     | 21:37 | 20:28  | 19:05     | 07:55 (2)  | 16:48    | 15:48    |
| 27                  | 05:03 | 06:04  | 07:06     | 07:37 (2)  | 07:09    | 08:14    |
|                     | 21:35 | 20:25  | 19:03     | 07:53 (2)  | 16:46    | 15:47    |
| 28                  | 05:05 | 06:06  | 07:08     | 07:39 (2)  | 07:11    | 08:16    |
|                     | 21:34 | 20:23  | 19:00     | 07:50 (2)  | 16:43    | 15:46    |
| 29                  | 05:07 | 06:08  | 07:10     | 07:13      | 08:17    | 08:48    |
|                     | 21:32 | 20:20  | 18:57     | 16:41      | 15:45    | 15:42    |
| 30                  | 05:09 | 06:10  | 07:12     | 07:15      | 08:19    | 08:48    |
|                     | 21:30 | 20:17  | 18:54     | 16:39      | 15:44    | 15:43    |
| 31                  | 05:11 | 06:12  | 07:14     | 07:17      | 08:48    | 08:48    |
|                     | 21:28 | 20:15  | 18:52     | 16:36      | 15:44    | 15:44    |
| Potential sun hours | 529   | 470    | 385       | 324        | 248      | 216      |
| Total, worst case   |       | 46     | 631       |            |          |          |
| Sun reduction       |       | 0,51   | 0,43      |            |          |          |
| Oper. time red.     |       | 0,94   | 0,94      |            |          |          |
| Wind dir. red.      |       | 0,66   | 0,65      |            |          |          |
| Total reduction     |       | 0,32   | 0,26      |            |          |          |
| Total, real         |       | 15     | 165       |            |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AO - Pludmales

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February            | March               | April              | May            | June                    |
|---------------------|----------------|---------------------|---------------------|--------------------|----------------|-------------------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42      | 09:06 (23)<br>17:44 | 07:09<br>19:50     | 06:47<br>19:50 | 07:14 (21)<br>08:05 (2) |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44      | 09:07 (23)<br>17:46 | 07:06<br>19:52     | 06:44<br>19:52 | 07:12 (21)<br>08:03 (2) |
| 3                   | 08:48<br>15:48 | 08:09<br>16:46      | 09:08 (23)<br>17:49 | 07:04<br>19:54     | 06:42<br>19:54 | 07:09 (21)<br>08:00 (2) |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49      | 09:09 (23)<br>17:51 | 07:01<br>19:56     | 06:39<br>19:56 | 07:06 (21)<br>08:00 (2) |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51      | 09:12 (23)<br>17:53 | 06:59<br>19:58     | 06:36<br>19:58 | 07:04 (21)<br>08:00 (2) |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53      | 09:20 (23)<br>17:55 | 07:53<br>20:00     | 06:34<br>20:00 | 07:01 (21)<br>08:00 (2) |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55      | 09:22 (23)<br>17:57 | 07:51<br>20:02     | 06:31<br>20:02 | 07:01 (21)<br>08:00 (2) |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58      | 09:24 (23)<br>17:59 | 06:51<br>20:04     | 06:28<br>20:04 | 07:00 (21)<br>08:00 (2) |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00      | 09:26 (23)<br>18:02 | 06:48<br>20:06     | 06:26<br>20:06 | 07:00 (21)<br>08:00 (2) |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02      | 09:28 (23)<br>18:04 | 06:46<br>20:08     | 06:23<br>20:08 | 07:00 (21)<br>08:00 (2) |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04      | 09:30 (23)<br>18:06 | 06:43<br>20:11     | 06:20<br>20:11 | 07:00 (21)<br>08:00 (2) |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07      | 09:32 (23)<br>18:08 | 06:40<br>20:13     | 06:18<br>20:13 | 07:01 (21)<br>08:00 (2) |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09      | 09:34 (23)<br>18:10 | 06:38<br>20:15     | 06:15<br>20:15 | 07:01 (21)<br>08:00 (2) |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11      | 09:36 (23)<br>18:12 | 06:35<br>20:17     | 06:13<br>20:17 | 07:03 (21)<br>08:00 (2) |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13      | 09:38 (23)<br>18:14 | 06:32<br>20:19     | 06:10<br>20:19 | 07:04 (21)<br>08:00 (2) |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16      | 09:40 (23)<br>18:16 | 06:30<br>20:21     | 06:08<br>20:21 | 07:06 (21)<br>08:00 (2) |
| 17                  | 08:36<br>16:11 | 09:14 (23)<br>17:18 | 09:42 (23)<br>18:18 | 06:58 (2)<br>20:23 | 06:08<br>20:23 | 07:08 (21)<br>08:00 (2) |
| 18                  | 08:35<br>16:12 | 09:12 (23)<br>17:20 | 09:44 (23)<br>18:21 | 06:55 (2)<br>20:25 | 06:05<br>20:25 | 07:10 (21)<br>08:00 (2) |
| 19                  | 08:34<br>16:14 | 09:11 (23)<br>17:22 | 09:46 (23)<br>18:23 | 06:52 (2)<br>20:27 | 06:02<br>20:27 | 07:11 (21)<br>08:00 (2) |
| 20                  | 08:33<br>16:16 | 09:10 (23)<br>17:24 | 09:48 (23)<br>18:25 | 06:50 (2)<br>20:29 | 06:00<br>20:29 | 07:12 (21)<br>08:00 (2) |
| 21                  | 08:31<br>16:18 | 09:09 (23)<br>17:26 | 09:50 (23)<br>18:27 | 06:49 (2)<br>20:31 | 05:57<br>20:31 | 07:14 (21)<br>08:00 (2) |
| 22                  | 08:30<br>16:21 | 09:07 (23)<br>17:28 | 09:52 (23)<br>18:29 | 06:48 (2)<br>20:33 | 05:55<br>20:33 | 07:15 (21)<br>08:00 (2) |
| 23                  | 08:28<br>16:23 | 09:06 (23)<br>17:30 | 09:54 (23)<br>18:31 | 06:47 (2)<br>20:35 | 05:53<br>20:35 | 07:16 (21)<br>08:00 (2) |
| 24                  | 08:27<br>16:25 | 09:05 (23)<br>17:32 | 09:56 (23)<br>18:33 | 06:46 (2)<br>20:37 | 05:50<br>20:37 | 07:17 (21)<br>08:00 (2) |
| 25                  | 08:25<br>16:27 | 09:04 (23)<br>17:34 | 09:58 (23)<br>18:35 | 06:45 (2)<br>20:39 | 05:48<br>20:39 | 07:18 (21)<br>08:00 (2) |
| 26                  | 08:23<br>16:29 | 09:03 (23)<br>17:36 | 10:00 (23)<br>18:37 | 06:44 (2)<br>20:41 | 05:45<br>20:41 | 07:19 (21)<br>08:00 (2) |
| 27                  | 08:22<br>16:31 | 09:02 (23)<br>17:38 | 10:02 (23)<br>18:39 | 06:43 (2)<br>20:43 | 05:43<br>20:43 | 07:20 (21)<br>08:00 (2) |
| 28                  | 08:20<br>16:33 | 09:01 (23)<br>17:40 | 10:04 (23)<br>18:41 | 06:42 (2)<br>20:45 | 05:40<br>20:45 | 07:21 (21)<br>08:00 (2) |
| 29                  | 08:18<br>16:35 | 09:00 (23)<br>17:42 | 10:06 (23)<br>18:43 | 06:41 (2)<br>20:47 | 05:38<br>20:47 | 07:22 (21)<br>08:00 (2) |
| 30                  | 08:16<br>16:38 | 08:59 (23)<br>17:44 | 10:08 (23)<br>18:45 | 06:40 (2)<br>20:49 | 05:35<br>20:49 | 07:23 (21)<br>08:00 (2) |
| 31                  | 08:15<br>16:40 | 08:58 (23)<br>17:46 | 10:10 (23)<br>18:47 | 06:39 (2)<br>20:51 | 05:33<br>20:51 | 07:24 (21)<br>08:00 (2) |
| Potential sun hours | 235            | 265                 | 365                 | 425                | 507            | 528                     |
| Total, worst case   | 262            | 75                  | 380                 | 302                |                |                         |
| Sun reduction       | 0,15           | 0,24                | 0,39                | 0,48               |                |                         |
| Oper. time red.     | 0,94           | 0,94                | 0,94                | 0,94               |                |                         |
| Wind dir. red.      | 0,58           | 0,58                | 0,64                | 0,66               |                |                         |
| Total reduction     | 0,08           | 0,13                | 0,23                | 0,30               |                |                         |
| Total, real         | 22             | 10                  | 89                  | 90                 |                |                         |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AO - Pludmales

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September  | October    | November  | December |
|---------------------|-------|--------|------------|------------|-----------|----------|
| 1                   | 04:27 | 05:13  | 06:14      | 07:00 (21) | 07:14     | 07:19    |
|                     | 22:07 | 21:26  | 20:12      | 21         | 18:52     | 16:34    |
| 2                   | 04:28 | 05:15  | 06:16      | 06:59 (21) | 07:16     | 07:22    |
|                     | 22:06 | 21:24  | 20:10      | 22         | 18:49     | 16:32    |
| 3                   | 04:29 | 05:16  | 06:18      | 06:58 (21) | 07:18     | 07:24    |
|                     | 22:06 | 21:22  | 20:07      | 23         | 18:46     | 16:30    |
| 4                   | 04:30 | 05:18  | 06:20      | 06:58 (21) | 07:20     | 07:26    |
|                     | 22:05 | 21:20  | 20:04      | 23         | 18:44     | 16:27    |
| 5                   | 04:31 | 05:20  | 06:22      | 06:58 (21) | 07:22     | 07:28    |
|                     | 22:04 | 21:18  | 20:02      | 23         | 18:41     | 16:25    |
| 6                   | 04:32 | 05:22  | 06:24      | 06:58 (21) | 07:24     | 07:30    |
|                     | 22:04 | 21:15  | 19:59      | 22         | 18:39     | 16:23    |
| 7                   | 04:33 | 05:24  | 06:26      | 06:58 (21) | 07:26     | 07:32    |
|                     | 22:03 | 21:13  | 19:56      | 22         | 18:36     | 16:21    |
| 8                   | 04:34 | 05:26  | 06:28      | 07:00 (21) | 07:28     | 07:35    |
|                     | 22:02 | 21:11  | 19:54      | 19         | 18:33     | 16:19    |
| 9                   | 04:35 | 05:28  | 06:30      | 07:01 (21) | 07:30     | 07:37    |
|                     | 22:01 | 21:09  | 19:51      | 16         | 18:31     | 16:17    |
| 10                  | 04:37 | 05:30  | 06:32      | 07:03 (21) | 07:33     | 07:39    |
|                     | 22:00 | 21:06  | 19:48      | 19         | 18:28     | 16:15    |
| 11                  | 04:38 | 05:32  | 06:34      | 07:05 (21) | 07:35     | 07:41    |
|                     | 21:59 | 21:04  | 19:46      | 22         | 18:25     | 16:13    |
| 12                  | 04:39 | 05:34  | 06:36      | 07:07 (21) | 07:37     | 07:43    |
|                     | 21:58 | 21:02  | 19:43      | 20         | 18:23     | 16:11    |
| 13                  | 04:40 | 05:36  | 06:38      | 07:38 (2)  | 07:39     | 07:45    |
|                     | 21:57 | 21:00  | 19:40      | 22         | 18:20     | 16:09    |
| 14                  | 04:42 | 05:38  | 06:40      | 07:37 (2)  | 07:41     | 07:47    |
|                     | 21:56 | 20:57  | 19:38      | 23         | 18:18     | 16:07    |
| 15                  | 04:43 | 05:40  | 06:42      | 07:35 (2)  | 07:43     | 07:50    |
|                     | 21:54 | 20:55  | 19:35      | 26         | 18:15     | 16:06    |
| 16                  | 04:45 | 05:42  | 06:44      | 07:34 (2)  | 07:45     | 07:52    |
|                     | 21:53 | 20:52  | 19:32      | 27         | 18:13     | 16:04    |
| 17                  | 04:46 | 05:44  | 06:46      | 07:34 (2)  | 07:47     | 07:54    |
|                     | 21:52 | 20:50  | 19:29      | 28         | 18:10     | 16:02    |
| 18                  | 04:48 | 05:46  | 06:48      | 07:33 (2)  | 07:49     | 07:56    |
|                     | 21:50 | 20:48  | 19:27      | 28         | 18:08     | 16:00    |
| 19                  | 04:50 | 05:48  | 06:50      | 07:33 (2)  | 07:51     | 07:58    |
|                     | 21:49 | 20:45  | 19:24      | 28         | 18:05     | 15:59    |
| 20                  | 04:51 | 05:50  | 06:52      | 07:32 (2)  | 07:54     | 08:00    |
|                     | 21:47 | 20:43  | 19:21      | 29         | 18:03     | 15:57    |
| 21                  | 04:53 | 05:52  | 06:54      | 07:32 (2)  | 07:56     | 08:02    |
|                     | 21:46 | 20:40  | 19:19      | 28         | 18:00     | 15:56    |
| 22                  | 04:54 | 05:54  | 06:56      | 07:32 (2)  | 07:58     | 08:04    |
|                     | 21:44 | 20:38  | 19:16      | 27         | 17:58     | 15:54    |
| 23                  | 04:56 | 05:56  | 06:58      | 07:33 (2)  | 08:00     | 08:06    |
|                     | 21:42 | 20:35  | 19:13      | 26         | 17:55     | 15:53    |
| 24                  | 04:58 | 05:58  | 07:00      | 07:33 (2)  | 08:02     | 08:08    |
|                     | 21:41 | 20:33  | 19:11      | 24         | 17:53     | 15:51    |
| 25                  | 05:00 | 06:00  | 07:02      | 07:34 (2)  | 08:04     | 08:10    |
|                     | 21:39 | 20:30  | 19:08      | 22         | 17:50     | 15:50    |
| 26                  | 05:02 | 06:02  | 07:04      | 07:35 (2)  | 07:06     | 08:12    |
|                     | 21:37 | 20:28  | 19:05      | 19         | 16:48     | 15:48    |
| 27                  | 05:03 | 06:04  | 07:06      | 07:37 (2)  | 07:09     | 08:14    |
|                     | 21:35 | 20:25  | 19:03      | 14         | 16:46     | 15:47    |
| 28                  | 05:05 | 06:06  | 07:08 (21) | 07:08      | 07:40 (2) | 07:11    |
|                     | 21:34 | 20:23  | 8          | 07:16 (21) | 19:00     | 7        |
| 29                  | 05:07 | 06:08  | 07:05 (21) | 07:10      | 07:47 (2) | 16:43    |
|                     | 21:32 | 20:20  | 14         | 07:19 (21) | 18:57     | 16:41    |
| 30                  | 05:09 | 06:10  | 07:02 (21) | 07:12      | 07:15     | 08:19    |
|                     | 21:30 | 20:17  | 17         | 07:19 (21) | 18:54     | 16:39    |
| 31                  | 05:11 | 06:12  | 07:01 (21) | 07:17      | 07:17     | 08:19    |
|                     | 21:28 | 20:15  | 19         | 07:20 (21) | 16:36     | 15:44    |
| Potential sun hours | 529   | 470    | 385        | 324        | 248       | 216      |
| Total, worst case   |       |        | 630        |            | 340       |          |
| Sun reduction       |       | 0,51   | 0,43       |            | 0,09      |          |
| Oper. time red.     |       | 0,94   | 0,94       |            | 0,94      |          |
| Wind dir. red.      |       | 0,66   | 0,65       |            | 0,58      |          |
| Total reduction     |       | 0,32   | 0,26       |            | 0,05      |          |
| Total, real         |       | 18     | 165        |            | 17        |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Assumptions for shadow calculations

Reference year for calendar

2025

Shadow receptor: AP - Kalna Galvani

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

| January             |       | February  |           | March |       | April      |       | May        |       | June       |       |
|---------------------|-------|-----------|-----------|-------|-------|------------|-------|------------|-------|------------|-------|
| 1                   | 08:48 | 09:36 (1) | 08:13     | 07:09 |       | 06:47      |       | 05:31      |       | 06:40 (19) | 04:34 |
|                     | 15:45 | 29        | 10:05 (1) | 16:42 | 17:44 | 19:50      |       | 20:52      | 16    | 06:56 (19) | 21:50 |
| 2                   | 08:48 |           | 09:37 (1) | 08:11 | 07:06 | 06:44      |       | 05:28      |       | 06:42 (19) | 04:32 |
|                     | 15:46 | 29        | 10:06 (1) | 16:44 | 17:46 | 19:52      |       | 20:54      | 12    | 06:54 (19) | 21:51 |
| 3                   | 08:48 |           | 09:37 (1) | 08:09 | 07:04 | 06:42      |       | 05:26      |       |            | 04:31 |
|                     | 15:48 | 29        | 10:06 (1) | 16:46 | 17:49 | 19:54      |       | 20:56      |       |            | 21:52 |
| 4                   | 08:47 |           | 09:38 (1) | 08:07 | 07:01 | 06:39      |       | 05:24      |       |            | 04:30 |
|                     | 15:49 | 29        | 10:07 (1) | 16:49 | 17:51 | 19:56      |       | 20:59      |       |            | 21:54 |
| 5                   | 08:47 |           | 09:38 (1) | 08:05 | 06:59 | 06:36      |       | 05:21      |       |            | 04:29 |
|                     | 15:50 | 29        | 10:07 (1) | 16:51 | 17:53 | 19:58      |       | 21:01      |       |            | 21:55 |
| 6                   | 08:46 |           | 09:38 (1) | 08:03 | 06:56 | 06:34      |       | 05:19      |       |            | 04:28 |
|                     | 15:52 | 30        | 10:08 (1) | 16:53 | 17:55 | 20:00      |       | 21:03      |       |            | 21:56 |
| 7                   | 08:46 |           | 09:38 (1) | 08:01 | 06:53 | 06:31      |       | 05:17      |       |            | 04:28 |
|                     | 15:53 | 30        | 10:08 (1) | 16:55 | 17:57 | 20:02      |       | 21:05      |       |            | 21:57 |
| 8                   | 08:45 |           | 09:38 (1) | 07:59 | 06:51 | 07:19 (20) | 06:28 | 05:15      |       |            | 04:27 |
|                     | 15:55 | 31        | 10:09 (1) | 16:58 | 17:59 | 07:24 (20) | 20:04 | 21:07      |       |            | 21:59 |
| 9                   | 08:44 |           | 09:38 (1) | 07:56 | 06:48 | 07:16 (20) | 06:26 | 05:13      |       |            | 04:26 |
|                     | 15:56 | 31        | 10:09 (1) | 17:00 | 18:02 | 07:26 (20) | 20:06 | 21:09      |       |            | 22:00 |
| 10                  | 08:44 |           | 09:39 (1) | 07:54 | 06:46 | 07:14 (20) | 06:23 | 05:11      |       |            | 04:25 |
|                     | 15:58 | 31        | 10:10 (1) | 17:02 | 18:04 | 07:28 (20) | 20:09 | 21:11      |       |            | 22:01 |
| 11                  | 08:43 |           | 09:39 (1) | 07:52 | 06:43 | 07:11 (20) | 06:20 | 06:48 (19) | 05:08 |            | 04:25 |
|                     | 16:00 | 31        | 10:10 (1) | 17:04 | 18:06 | 07:28 (20) | 20:11 | 06:57 (19) | 21:13 |            | 22:02 |
| 12                  | 08:42 |           | 09:40 (1) | 07:50 | 06:40 | 07:08 (20) | 06:18 | 06:46 (19) | 05:06 |            | 04:24 |
|                     | 16:01 | 31        | 10:11 (1) | 17:07 | 18:08 | 07:28 (20) | 20:13 | 07:01 (19) | 21:15 |            | 22:02 |
| 13                  | 08:41 |           | 09:40 (1) | 07:48 | 06:38 | 07:06 (20) | 06:15 | 06:43 (19) | 05:04 |            | 04:24 |
|                     | 16:03 | 32        | 10:12 (1) | 17:09 | 18:10 | 07:29 (20) | 20:15 | 07:02 (19) | 21:17 |            | 22:03 |
| 14                  | 08:40 |           | 09:40 (1) | 07:45 | 06:35 | 07:05 (20) | 06:13 | 06:41 (19) | 05:02 |            | 04:23 |
|                     | 16:05 | 31        | 10:11 (1) | 17:11 | 18:12 | 07:29 (20) | 20:17 | 07:04 (19) | 21:19 |            | 22:04 |
| 15                  | 08:39 |           | 09:41 (1) | 07:43 | 06:32 | 07:04 (20) | 06:10 | 06:38 (19) | 05:00 |            | 04:23 |
|                     | 16:07 | 31        | 10:12 (1) | 17:13 | 18:14 | 07:28 (20) | 20:19 | 07:04 (19) | 21:21 |            | 22:05 |
| 16                  | 08:38 |           | 09:42 (1) | 07:41 | 06:30 | 07:04 (20) | 06:07 | 06:37 (19) | 04:59 |            | 04:23 |
|                     | 16:09 | 31        | 10:13 (1) | 17:16 | 18:16 | 07:27 (20) | 20:21 | 07:05 (19) | 21:22 |            | 22:05 |
| 17                  | 08:37 |           | 09:42 (1) | 07:38 | 06:27 | 07:05 (20) | 06:05 | 06:36 (19) | 04:57 |            | 04:23 |
|                     | 16:10 | 30        | 10:12 (1) | 17:18 | 18:19 | 07:27 (20) | 20:23 | 07:05 (19) | 21:24 |            | 22:06 |
| 18                  | 08:35 |           | 09:42 (1) | 07:36 | 06:24 | 07:05 (20) | 06:02 | 06:36 (19) | 04:55 |            | 04:23 |
|                     | 16:12 | 30        | 10:12 (1) | 17:20 | 18:21 | 07:26 (20) | 20:25 | 07:06 (19) | 21:26 |            | 22:06 |
| 19                  | 08:34 |           | 09:43 (1) | 07:34 | 06:22 | 07:05 (20) | 06:00 | 06:34 (19) | 04:53 |            | 04:23 |
|                     | 16:14 | 30        | 10:13 (1) | 17:22 | 18:23 | 07:25 (20) | 20:27 | 07:05 (19) | 21:28 |            | 22:07 |
| 20                  | 08:33 |           | 09:43 (1) | 07:31 | 06:19 | 07:07 (20) | 05:57 | 06:34 (19) | 04:51 |            | 04:23 |
|                     | 16:16 | 30        | 10:13 (1) | 17:24 | 18:25 | 07:24 (20) | 20:29 | 07:05 (19) | 21:30 |            | 22:07 |
| 21                  | 08:31 |           | 09:45 (1) | 07:29 | 06:16 | 07:08 (20) | 05:55 | 06:35 (19) | 04:50 |            | 04:23 |
|                     | 16:18 | 28        | 10:13 (1) | 17:27 | 18:27 | 07:21 (20) | 20:31 | 07:06 (19) | 21:32 |            | 22:07 |
| 22                  | 08:30 |           | 09:45 (1) | 07:26 | 06:14 | 07:11 (20) | 05:52 | 06:34 (19) | 04:48 |            | 04:23 |
|                     | 16:20 | 28        | 10:13 (1) | 17:29 | 18:29 | 07:17 (20) | 20:34 | 07:05 (19) | 21:34 |            | 22:08 |
| 23                  | 08:28 |           | 09:46 (1) | 07:24 | 06:11 |            | 05:50 | 06:34 (19) | 04:46 |            | 04:23 |
|                     | 16:23 | 26        | 10:12 (1) | 17:31 | 18:31 |            | 20:36 | 07:05 (19) | 21:35 |            | 22:08 |
| 24                  | 08:27 |           | 09:46 (1) | 07:21 | 06:08 |            | 05:47 | 06:34 (19) | 04:45 |            | 04:23 |
|                     | 16:25 | 26        | 10:12 (1) | 17:33 | 18:33 |            | 20:38 | 07:04 (19) | 21:37 |            | 22:08 |
| 25                  | 08:25 |           | 09:47 (1) | 07:19 | 06:06 |            | 05:45 | 06:34 (19) | 04:43 |            | 04:24 |
|                     | 16:27 | 24        | 10:11 (1) | 17:36 | 18:35 |            | 20:40 | 07:03 (19) | 21:39 |            | 22:08 |
| 26                  | 08:23 |           | 09:49 (1) | 07:16 | 06:03 |            | 05:42 | 06:35 (19) | 04:42 |            | 04:24 |
|                     | 16:29 | 21        | 10:10 (1) | 17:38 | 18:37 |            | 20:42 | 07:03 (19) | 21:40 |            | 22:08 |
| 27                  | 08:22 |           | 09:50 (1) | 07:14 | 06:00 |            | 05:40 | 06:36 (19) | 04:40 |            | 04:25 |
|                     | 16:31 | 19        | 10:09 (1) | 17:40 | 18:39 |            | 20:44 | 07:02 (19) | 21:42 |            | 22:08 |
| 28                  | 08:20 |           | 09:52 (1) | 07:11 | 05:58 |            | 05:38 | 06:36 (19) | 04:39 |            | 04:25 |
|                     | 16:33 | 15        | 10:07 (1) | 17:42 | 18:42 |            | 20:46 | 07:00 (19) | 21:44 |            | 22:08 |
| 29                  | 08:18 |           | 09:55 (1) |       | 05:55 |            | 05:35 | 06:37 (19) | 04:37 |            | 04:26 |
|                     | 16:35 | 10        | 10:05 (1) |       | 18:44 |            | 20:48 | 06:59 (19) | 21:45 |            | 22:07 |
| 30                  | 08:16 |           |           |       | 06:52 |            | 05:33 | 06:38 (19) | 04:36 |            | 04:26 |
|                     | 16:38 |           |           |       | 19:46 |            | 20:50 | 06:58 (19) | 21:47 |            | 22:07 |
| 31                  | 08:15 |           |           |       | 06:50 |            |       | 04:35      |       |            |       |
|                     | 16:40 |           |           |       | 19:48 |            |       | 21:48      |       |            |       |
| Potential sun hours | 235   |           | 265       | 365   |       | 425        |       | 507        |       | 529        |       |
| Total, worst case   |       | 802       |           |       | 259   |            | 513   |            | 28    |            |       |
| Sun reduction       |       | 0,15      |           |       | 0,39  |            | 0,48  |            | 0,53  |            |       |
| Oper. time red.     |       | 0,94      |           |       | 0,94  |            | 0,94  |            | 0,94  |            |       |
| Wind dir. red.      |       | 0,60      |           |       | 0,63  |            | 0,66  |            | 0,66  |            |       |
| Total reduction     |       | 0,09      |           |       | 0,23  |            | 0,30  |            | 0,33  |            |       |
| Total, real         |       | 70        |           |       | 59    |            | 153   |            | 9     |            |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AP - Kalna Galvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | July           | August         | September      | October             | November            | December       |
|---------------------|----------------|----------------|----------------|---------------------|---------------------|----------------|
| 1                   | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 06:46 (19)<br>18:52 | 07:14<br>18:08 (20) | 07:19<br>16:34 |
| 2                   | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 06:48 (19)<br>18:49 | 07:16<br>18:07 (20) | 07:22<br>16:32 |
| 3                   | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 06:54 (19)<br>18:49 | 07:18<br>18:06 (20) | 07:24<br>16:30 |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44      | 07:20<br>18:05 (20) | 07:26<br>16:27 |
| 5                   | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41      | 07:28<br>18:03 (20) | 07:28<br>16:25 |
| 6                   | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:39      | 07:30<br>18:00 (20) | 07:30<br>16:23 |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36      | 07:32<br>16:21      | 07:32<br>16:21 |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33      | 07:35<br>16:19      | 07:35<br>16:19 |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31      | 07:37<br>16:17      | 07:37<br>16:17 |
| 10                  | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28      | 07:39<br>16:15      | 07:39<br>16:15 |
| 11                  | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25      | 07:41<br>16:13      | 07:41<br>16:13 |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23      | 07:43<br>16:11      | 07:43<br>16:11 |
| 13                  | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20      | 07:45<br>16:09      | 07:45<br>16:09 |
| 14                  | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18      | 07:48<br>16:07      | 07:48<br>16:07 |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15      | 07:50<br>16:05      | 07:50<br>16:05 |
| 16                  | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13      | 07:52<br>16:04      | 07:52<br>16:04 |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10      | 07:54<br>16:02      | 07:54<br>16:02 |
| 18                  | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08      | 07:56<br>16:00      | 07:56<br>16:00 |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05      | 07:58<br>15:59      | 07:58<br>15:59 |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03      | 08:00<br>15:57      | 08:00<br>15:57 |
| 21                  | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00      | 08:02<br>15:55      | 08:02<br>15:55 |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58      | 08:04<br>15:54      | 08:04<br>15:54 |
| 23                  | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55      | 08:06<br>15:52      | 08:06<br>15:52 |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53      | 08:08<br>15:51      | 08:08<br>15:51 |
| 25                  | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50      | 08:10<br>15:50      | 08:10<br>15:50 |
| 26                  | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 08:06<br>17:48      | 08:12<br>15:48      | 08:12<br>15:48 |
| 27                  | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 08:08<br>17:46      | 08:14<br>15:47      | 08:14<br>15:47 |
| 28                  | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 08:10<br>17:43      | 08:16<br>15:46      | 08:16<br>15:46 |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 08:12<br>17:41      | 08:18<br>15:45      | 08:18<br>15:45 |
| 30                  | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 08:14<br>17:39      | 08:20<br>15:44      | 08:20<br>15:44 |
| 31                  | 05:11<br>21:28 | 06:12<br>20:15 | 07:14<br>18:51 | 08:16<br>17:37      | 08:22<br>15:43      | 08:22<br>15:43 |
| Potential sun hours | 530            | 470            | 385            | 324                 | 248                 | 216            |
| Total, worst case   |                | 533            | 197            | 89                  | 458                 | 870            |
| Sun reduction       |                | 0,51           | 0,43           | 0,27                | 0,09                | 0,09           |
| Oper. time red.     |                | 0,94           | 0,94           | 0,94                | 0,94                | 0,94           |
| Wind dir. red.      |                | 0,66           | 0,63           | 0,63                | 0,60                | 0,60           |
| Total reduction     |                | 0,32           | 0,25           | 0,16                | 0,05                | 0,05           |
| Total, real         |                | 170            | 50             | 14                  | 24                  | 42             |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AQ - Ziedini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:20    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:57 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:16  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:27   | 07:33    | 08:31    |
|                     | 15:53   | 16:56    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:45   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:02 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:33 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:22     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:24   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:07   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:17   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:18  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AR - Strautini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:20    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:57 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:16  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:27   | 07:33    | 08:31    |
|                     | 15:53   | 16:56    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:45   | 07:57    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:02 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:33 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:55 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:22     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:17 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:24   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:07   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:17   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:18  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AS - Druvas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March |      | April     |       | May       | June  | July  | August | September |    | October   | November | December |
|---------------------|---------|----------|-------|------|-----------|-------|-----------|-------|-------|--------|-----------|----|-----------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 |      | 06:47     |       |           |       |       |        |           |    | 07:14     | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 |      | 19:50     | 13    | 08:02 (1) | 20:52 | 21:50 | 22:07  | 21:26     |    | 18:52     | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 |      | 06:44     |       | 07:54 (1) | 05:28 | 04:33 | 04:28  | 05:15     |    | 07:16     | 07:22    | 08:23    |
|                     | 15:46   | 16:44    | 17:47 |      | 19:52     | 4     | 07:58 (1) | 20:54 | 21:51 | 22:06  | 21:24     |    | 18:49     | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 |      | 06:42     |       |           | 05:26 | 04:31 | 04:29  | 05:16     |    | 07:18     | 07:24    | 08:25    |
|                     | 15:48   | 16:46    | 17:49 |      | 19:54     |       |           | 20:56 | 21:52 | 22:06  | 21:22     |    | 18:47     | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 |      | 06:39     |       |           | 05:24 | 04:30 | 04:30  | 05:18     |    | 07:20     | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 |      | 19:56     |       |           | 20:59 | 21:54 | 22:05  | 21:20     |    | 18:44     | 16:27    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 |      | 06:36     |       |           | 05:22 | 04:29 | 04:31  | 05:20     |    | 07:22     | 07:28    | 08:28    |
|                     | 15:50   | 16:51    | 17:53 |      | 19:58     |       |           | 21:01 | 21:55 | 22:04  | 21:18     |    | 18:41     | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 |      | 06:34     |       |           | 05:19 | 04:29 | 04:32  | 05:22     |    | 07:24     | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 |      | 20:00     |       |           | 21:03 | 21:56 | 22:04  | 21:15     |    | 18:39     | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 |      | 06:31     |       |           | 05:17 | 04:28 | 04:33  | 05:24     |    | 07:26     | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 |      | 20:02     |       |           | 21:05 | 21:57 | 22:03  | 21:13     |    | 18:36     | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 |      | 06:28     |       |           | 05:15 | 04:27 | 04:34  | 05:26     |    | 07:29     | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 |      | 20:04     |       |           | 21:07 | 21:59 | 22:02  | 21:11     |    | 18:33     | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 |      | 06:26     |       |           | 05:13 | 04:26 | 04:35  | 05:28     |    | 07:31     | 07:37    | 08:34    |
|                     | 15:56   | 17:00    | 18:02 |      | 20:07     |       |           | 21:09 | 22:00 | 22:01  | 21:09     |    | 18:31     | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 |      | 06:23     |       |           | 05:11 | 04:26 | 04:37  | 05:30     |    | 07:33     | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 |      | 20:09     |       |           | 21:11 | 22:01 | 22:00  | 21:07     |    | 18:28     | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 |      | 06:21     |       |           | 05:09 | 04:25 | 04:38  | 05:32     |    | 07:35     | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 |      | 20:11     |       |           | 21:13 | 22:01 | 21:59  | 21:04     | 8  | 07:52 (1) | 18:25    | 16:13    |
| 12                  | 08:42   | 07:50    | 06:40 |      | 06:18     |       |           | 05:07 | 04:24 | 04:39  | 05:34     |    | 07:40 (1) | 07:37    | 07:43    |
|                     | 16:01   | 17:07    | 18:08 |      | 20:13     |       |           | 21:15 | 22:02 | 21:58  | 21:02     | 15 | 07:55 (1) | 18:23    | 16:11    |
| 13                  | 08:41   | 07:48    | 06:38 |      | 06:15     |       |           | 05:05 | 04:24 | 04:40  | 05:36     |    | 07:38 (1) | 07:39    | 07:45    |
|                     | 16:03   | 17:09    | 18:10 |      | 20:15     |       |           | 21:17 | 22:03 | 21:57  | 21:00     | 19 | 07:57 (1) | 18:20    | 16:09    |
| 14                  | 08:40   | 07:45    | 06:35 |      | 06:13     |       |           | 05:03 | 04:24 | 04:42  | 05:38     |    | 07:37 (1) | 07:41    | 07:48    |
|                     | 16:05   | 17:11    | 18:12 |      | 20:17     |       |           | 21:19 | 22:04 | 21:56  | 20:57     | 21 | 07:58 (1) | 18:18    | 16:07    |
| 15                  | 08:39   | 07:43    | 06:32 |      | 06:10     |       |           | 05:01 | 04:23 | 04:43  | 05:40     |    | 07:35 (1) | 07:43    | 07:50    |
|                     | 16:07   | 17:13    | 18:14 |      | 20:19     |       |           | 21:21 | 22:05 | 21:54  | 20:55     | 24 | 07:59 (1) | 18:15    | 16:06    |
| 16                  | 08:38   | 07:41    | 06:30 |      | 06:08     |       |           | 04:59 | 04:23 | 04:45  | 05:42     |    | 07:34 (1) | 07:45    | 07:52    |
|                     | 16:09   | 17:16    | 18:16 | 8    | 07:05 (1) | 20:21 |           | 21:22 | 22:05 | 21:53  | 20:53     | 25 | 07:59 (1) | 18:13    | 16:04    |
| 17                  | 08:37   | 07:38    | 06:27 |      | 06:55 (1) | 06:05 |           | 04:57 | 04:23 | 04:46  | 05:44     |    | 07:33 (1) | 07:47    | 07:54    |
|                     | 16:11   | 17:18    | 18:19 | 14   | 07:09 (1) | 20:23 |           | 21:24 | 22:06 | 21:52  | 20:50     | 27 | 08:00 (1) | 18:10    | 16:02    |
| 18                  | 08:35   | 07:36    | 06:24 |      | 06:52 (1) | 06:02 |           | 04:55 | 04:23 | 04:48  | 05:46     |    | 07:33 (1) | 07:49    | 07:56    |
|                     | 16:13   | 17:20    | 18:21 | 18   | 07:10 (1) | 20:25 |           | 21:26 | 22:06 | 21:50  | 20:48     | 19 | 08:00 (1) | 18:08    | 16:00    |
| 19                  | 08:34   | 07:34    | 06:22 |      | 06:49 (1) | 06:00 |           | 04:53 | 04:23 | 04:50  | 05:48     |    | 07:32 (1) | 07:51    | 07:58    |
|                     | 16:14   | 17:22    | 18:23 | 22   | 07:11 (1) | 20:27 |           | 21:28 | 22:07 | 21:49  | 20:45     | 28 | 08:00 (1) | 18:05    | 15:59    |
| 20                  | 08:33   | 07:31    | 06:19 |      | 06:48 (1) | 05:57 |           | 04:51 | 04:23 | 04:51  | 05:50     |    | 07:32 (1) | 07:54    | 08:00    |
|                     | 16:16   | 17:25    | 18:25 | 24   | 07:12 (1) | 20:29 |           | 21:30 | 22:07 | 21:47  | 20:43     | 27 | 07:59 (1) | 18:03    | 15:57    |
| 21                  | 08:31   | 07:29    | 06:16 |      | 06:47 (1) | 05:55 |           | 04:50 | 04:23 | 04:53  | 05:52     |    | 07:31 (1) | 07:56    | 08:02    |
|                     | 16:19   | 17:27    | 18:27 | 25   | 07:12 (1) | 20:32 |           | 21:32 | 22:07 | 21:46  | 20:40     | 28 | 07:59 (1) | 18:00    | 15:56    |
| 22                  | 08:30   | 07:26    | 06:14 |      | 06:46 (1) | 05:52 |           | 04:48 | 04:23 | 04:55  | 05:54     |    | 07:31 (1) | 07:58    | 08:04    |
|                     | 16:21   | 17:29    | 18:29 | 26   | 07:12 (1) | 20:34 |           | 21:34 | 22:08 | 21:44  | 20:38     | 27 | 07:58 (1) | 17:58    | 15:54    |
| 23                  | 08:28   | 07:24    | 06:11 |      | 06:46 (1) | 05:50 |           | 04:46 | 04:23 | 04:56  | 05:56     |    | 07:32 (1) | 08:00    | 08:06    |
|                     | 16:23   | 17:31    | 18:31 | 27   | 07:13 (1) | 20:36 |           | 21:35 | 22:08 | 21:43  | 20:35     | 25 | 07:57 (1) | 17:55    | 15:53    |
| 24                  | 08:27   | 07:21    | 06:08 |      | 06:45 (1) | 05:47 |           | 04:45 | 04:23 | 04:58  | 05:58     |    | 07:32 (1) | 08:02    | 08:08    |
|                     | 16:25   | 17:33    | 18:33 | 28   | 07:13 (1) | 20:38 |           | 21:37 | 22:08 | 21:41  | 20:33     | 24 | 07:56 (1) | 17:53    | 15:51    |
| 25                  | 08:25   | 07:19    | 06:06 |      | 06:45 (1) | 05:45 |           | 04:43 | 04:24 | 05:00  | 06:00     |    | 07:33 (1) | 08:04    | 08:10    |
|                     | 16:27   | 17:36    | 18:35 | 27   | 07:12 (1) | 20:40 |           | 21:39 | 22:08 | 21:39  | 20:30     | 21 | 07:54 (1) | 17:50    | 15:50    |
| 26                  | 08:23   | 07:17    | 06:03 |      | 06:44 (1) | 05:43 |           | 04:42 | 04:24 | 05:02  | 06:02     |    | 07:35 (1) | 07:06    | 08:12    |
|                     | 16:29   | 17:38    | 18:37 | 27   | 07:11 (1) | 20:42 |           | 21:40 | 22:08 | 21:37  | 20:28     | 18 | 07:53 (1) | 16:48    | 15:48    |
| 27                  | 08:22   | 07:14    | 06:00 |      | 06:45 (1) | 05:40 |           | 04:40 | 04:25 | 05:03  | 06:04     |    | 07:37 (1) | 07:09    | 08:14    |
|                     | 16:31   | 17:40    | 18:39 | 26   | 07:11 (1) | 20:44 |           | 21:42 | 22:08 | 21:36  | 20:25     | 13 | 07:50 (1) | 16:46    | 15:47    |
| 28                  | 08:20   | 07:11    | 05:58 |      | 06:45 (1) | 05:38 |           | 04:39 | 04:25 | 05:05  | 06:06     |    | 07:39 (1) | 07:11    | 08:16    |
|                     | 16:33   | 17:42    | 18:42 | 25   | 07:10 (1) | 20:46 |           | 21:44 | 22:08 | 21:34  | 20:23     | 7  | 07:46 (1) | 16:43    | 15:46    |
| 29                  | 08:18   |          | 05:55 |      | 06:45 (1) | 05:35 |           | 04:37 | 04:26 | 05:07  | 06:08     |    | 07:13     | 08:18    | 08:48    |
|                     | 16:35   |          | 18:44 | 23   | 07:08 (1) | 20:48 |           | 21:45 | 22:07 | 21:32  | 20:20     |    | 16:41     | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 |      | 07:47 (1) | 05:33 |           | 04:36 | 04:27 | 05:09  | 06:10     |    | 07:15     | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20   | 08:07 (1) | 20:50 |           | 21:47 | 22:07 | 21:30  | 20:17     |    | 16:39     | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |      | 07:47 (1) |       |           | 04:35 |       | 05:11  | 06:12     |    | 07:17     |          | 08:48    |
|                     | 16:40   |          | 19:48 | 18   | 08:05 (1) |       |           | 21:48 |       | 21:28  | 20:15     |    | 16:36     |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   |      | 425       |       |           | 507   | 528   | 529    | 470       |    | 385       |          | 216      |
| Total, worst case   |         |          |       | 358  |           | 17    |           |       |       |        |           |    | 384       |          |          |
| Sun reduction       |         |          |       | 0,39 |           | 0,48  |           |       |       |        |           |    | 0,43      |          |          |
| Oper. time red.     |         |          |       | 0,94 |           | 0,94  |           |       |       |        |           |    | 0,94      |          |          |
| Wind dir. red.      |         |          |       | 0,64 |           | 0,64  |           |       |       |        |           |    | 0,64      |          |          |
| Total reduction     |         |          |       | 0,23 |           | 0,29  |           |       |       |        |           |    | 0,26      |          |          |
| Total, real         |         |          |       | 84   |           | 5     |           |       |       |        |           |    | 99        |          |          |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AT - Saulkrasti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:20    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:57 | 21:53 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:16  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:27   | 07:33    | 08:31    |
|                     | 15:53   | 16:56    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:05 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:45   | 07:57    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:05    | 18:06 | 20:11 | 21:13 | 22:02 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:46    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:33 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:55 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:30 | 21:30 | 22:07 | 21:47 | 20:43  | 19:22     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:17 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:08 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:24   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:07   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:49    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:17   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:49    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:18  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AU - Jaundruvas 1

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     |       | January | February | March |           | April |           | May   | June  | July  |      | August | September |           | October   | November | December |
|---------------------|-------|---------|----------|-------|-----------|-------|-----------|-------|-------|-------|------|--------|-----------|-----------|-----------|----------|----------|
| 1                   | 08:48 | 08:13   | 07:09    |       | 06:47     |       | 07:29 (1) | 05:31 | 04:34 | 04:27 |      | 05:13  | 06:14     |           | 07:14     | 07:19    | 08:21    |
|                     | 15:45 | 16:42   | 17:44    |       | 19:50     | 27    | 07:56 (1) | 20:52 | 21:50 | 22:07 |      | 21:26  | 20:12     |           | 18:52     | 16:34    | 15:43    |
| 2                   | 08:48 | 08:11   | 07:06    |       | 06:44     |       | 07:29 (1) | 05:28 | 04:33 | 04:28 |      | 05:15  | 06:16     |           | 07:16     | 07:22    | 08:23    |
|                     | 15:46 | 16:44   | 17:47    |       | 19:52     | 27    | 07:56 (1) | 20:54 | 21:51 | 22:06 |      | 21:24  | 20:10     |           | 18:49     | 16:32    | 15:42    |
| 3                   | 08:48 | 08:09   | 07:04    |       | 06:42     |       | 07:29 (1) | 05:26 | 04:31 | 04:29 |      | 05:16  | 06:18     |           | 07:18     | 07:24    | 08:25    |
|                     | 15:48 | 16:46   | 17:49    |       | 19:54     | 26    | 07:55 (1) | 20:56 | 21:52 | 22:06 |      | 21:22  | 20:07     |           | 18:47     | 16:30    | 15:41    |
| 4                   | 08:47 | 08:07   | 07:01    |       | 06:39     |       | 07:30 (1) | 05:24 | 04:30 | 04:30 |      | 05:18  | 06:20     |           | 07:20     | 07:26    | 08:26    |
|                     | 15:49 | 16:49   | 17:51    |       | 19:56     | 25    | 07:55 (1) | 20:59 | 21:54 | 22:05 |      | 21:20  | 20:04     |           | 18:44     | 16:27    | 15:40    |
| 5                   | 08:47 | 08:05   | 06:59    |       | 06:36     |       | 07:31 (1) | 05:22 | 04:29 | 04:31 |      | 05:20  | 06:22     |           | 07:32 (1) | 07:22    | 08:28    |
|                     | 15:50 | 16:51   | 17:53    |       | 19:58     | 22    | 07:53 (1) | 21:01 | 21:55 | 22:04 |      | 21:18  | 20:02     | 12        | 07:44 (1) | 18:41    | 16:25    |
| 6                   | 08:46 | 08:03   | 06:56    |       | 06:34     |       | 07:31 (1) | 05:19 | 04:29 | 04:32 |      | 05:22  | 06:24     |           | 07:29 (1) | 07:24    | 08:30    |
|                     | 15:52 | 16:53   | 17:55    |       | 20:00     | 20    | 07:51 (1) | 21:03 | 21:56 | 22:04 |      | 21:15  | 19:59     | 17        | 07:46 (1) | 18:39    | 16:23    |
| 7                   | 08:46 | 08:01   | 06:54    |       | 06:31     |       | 07:34 (1) | 05:17 | 04:28 | 04:33 |      | 05:24  | 06:26     |           | 07:27 (1) | 07:26    | 08:31    |
|                     | 15:53 | 16:55   | 17:57    |       | 20:02     | 15    | 07:49 (1) | 21:05 | 21:57 | 22:03 |      | 21:13  | 19:56     | 20        | 07:47 (1) | 18:36    | 16:21    |
| 8                   | 08:45 | 07:59   | 06:51    |       | 06:28     |       | 07:36 (1) | 05:15 | 04:27 | 04:34 |      | 05:26  | 06:28     |           | 07:25 (1) | 07:29    | 08:32    |
|                     | 15:55 | 16:58   | 17:59    |       | 20:04     | 9     | 07:45 (1) | 21:07 | 21:58 | 22:02 |      | 21:11  | 19:54     | 23        | 07:48 (1) | 18:33    | 16:19    |
| 9                   | 08:44 | 07:56   | 06:48    |       | 06:26     |       | 05:13     | 04:26 | 04:35 | 05:28 |      | 06:30  |           |           | 07:24 (1) | 07:31    | 07:37    |
|                     | 15:56 | 17:00   | 18:02    |       | 20:07     |       | 21:09     | 22:00 | 22:01 | 21:09 |      | 19:51  | 25        | 07:49 (1) | 18:31     | 16:17    | 15:37    |
| 10                  | 08:44 | 07:54   | 06:46    |       | 06:23     |       | 05:11     | 04:26 | 04:37 | 05:30 |      | 06:32  |           |           | 07:22 (1) | 07:33    | 07:39    |
|                     | 15:58 | 17:02   | 18:04    |       | 20:09     |       | 21:11     | 22:01 | 22:00 | 21:07 |      | 19:48  | 27        | 07:49 (1) | 18:28     | 16:15    | 15:36    |
| 11                  | 08:43 | 07:52   | 06:43    |       | 06:21     |       | 05:09     | 04:25 | 04:38 | 05:32 |      | 06:34  |           |           | 07:21 (1) | 07:35    | 07:41    |
|                     | 16:00 | 17:04   | 18:06    |       | 20:11     |       | 21:13     | 22:01 | 21:59 | 21:04 |      | 19:46  | 28        | 07:49 (1) | 18:25     | 16:13    | 15:36    |
| 12                  | 08:42 | 07:50   | 06:40    |       | 06:18     |       | 05:07     | 04:24 | 04:39 | 05:34 |      | 06:36  |           |           | 07:21 (1) | 07:37    | 07:43    |
|                     | 16:01 | 17:07   | 18:08    |       | 20:13     |       | 21:15     | 22:02 | 21:58 | 21:02 |      | 19:43  | 28        | 07:49 (1) | 18:23     | 16:11    | 15:36    |
| 13                  | 08:41 | 07:48   | 06:38    |       | 06:15     |       | 05:05     | 04:24 | 04:41 | 05:36 |      | 06:38  |           |           | 07:20 (1) | 07:39    | 07:45    |
|                     | 16:03 | 17:09   | 18:10    |       | 20:15     |       | 21:17     | 22:03 | 21:57 | 21:00 |      | 19:40  | 29        | 07:49 (1) | 18:20     | 16:09    | 15:35    |
| 14                  | 08:40 | 07:45   | 06:35    |       | 06:13     |       | 05:03     | 04:24 | 04:42 | 05:38 |      | 06:40  |           |           | 07:20 (1) | 07:41    | 07:48    |
|                     | 16:05 | 17:11   | 18:12    |       | 20:17     |       | 21:19     | 22:04 | 21:56 | 20:57 |      | 19:38  | 28        | 07:48 (1) | 18:18     | 16:07    | 15:35    |
| 15                  | 08:39 | 07:43   | 06:32    |       | 06:10     |       | 05:01     | 04:23 | 04:43 | 05:40 |      | 06:42  |           |           | 07:20 (1) | 07:43    | 07:50    |
|                     | 16:07 | 17:13   | 18:14    |       | 20:19     |       | 21:20     | 22:05 | 21:54 | 20:55 |      | 19:35  | 28        | 07:48 (1) | 18:15     | 16:06    | 15:35    |
| 16                  | 08:38 | 07:41   | 06:30    |       | 06:08     |       | 04:59     | 04:23 | 04:45 | 05:42 |      | 06:44  |           |           | 07:20 (1) | 07:45    | 07:52    |
|                     | 16:09 | 17:16   | 18:16    |       | 20:21     |       | 21:22     | 22:05 | 21:53 | 20:53 |      | 19:32  | 27        | 07:47 (1) | 18:13     | 16:04    | 15:35    |
| 17                  | 08:37 | 07:38   | 06:27    |       | 06:05     |       | 04:57     | 04:23 | 04:46 | 05:44 |      | 06:46  |           |           | 07:20 (1) | 07:47    | 07:54    |
|                     | 16:11 | 17:18   | 18:19    |       | 20:23     |       | 21:24     | 22:06 | 21:52 | 20:50 |      | 19:30  | 26        | 07:46 (1) | 18:10     | 16:02    | 15:35    |
| 18                  | 08:35 | 07:36   | 06:24    |       | 06:02     |       | 04:55     | 04:23 | 04:48 | 05:46 |      | 06:48  |           |           | 07:21 (1) | 07:49    | 07:56    |
|                     | 16:13 | 17:20   | 18:21    |       | 20:25     |       | 21:26     | 22:06 | 21:50 | 20:48 |      | 19:27  | 24        | 07:45 (1) | 18:08     | 16:00    | 15:35    |
| 19                  | 08:34 | 07:34   | 06:22    |       | 06:00     |       | 04:53     | 04:23 | 04:50 | 05:48 |      | 06:50  |           |           | 07:21 (1) | 07:51    | 07:58    |
|                     | 16:14 | 17:22   | 18:23    |       | 20:27     |       | 21:28     | 22:07 | 21:49 | 20:45 |      | 19:24  | 23        | 07:44 (1) | 18:05     | 15:59    | 15:36    |
| 20                  | 08:33 | 07:31   | 06:19    |       | 05:57     |       | 04:51     | 04:23 | 04:51 | 05:50 |      | 06:52  |           |           | 07:23 (1) | 07:54    | 08:00    |
|                     | 16:16 | 17:25   | 18:25    |       | 20:29     |       | 21:30     | 22:07 | 21:47 | 20:43 |      | 19:21  | 19        | 07:42 (1) | 18:03     | 15:57    | 15:36    |
| 21                  | 08:31 | 07:29   | 06:16    |       | 05:55     |       | 04:50     | 04:23 | 04:53 | 05:52 |      | 06:54  |           |           | 07:25 (1) | 07:56    | 08:02    |
|                     | 16:19 | 17:27   | 18:27    |       | 20:31     |       | 21:32     | 22:07 | 21:46 | 20:40 |      | 19:19  | 15        | 07:40 (1) | 18:00     | 15:56    | 15:36    |
| 22                  | 08:30 | 07:26   | 06:14    |       | 05:52     |       | 04:48     | 04:23 | 04:55 | 05:54 |      | 06:56  |           |           | 07:27 (1) | 07:58    | 08:04    |
|                     | 16:21 | 17:29   | 18:29    | 11    | 06:52 (1) | 20:34 | 21:34     | 22:08 | 21:44 | 20:38 |      | 19:16  | 10        | 07:37 (1) | 17:58     | 15:54    | 15:37    |
| 23                  | 08:28 | 07:24   | 06:11    |       | 06:39 (1) | 05:50 | 04:46     | 04:23 | 04:56 | 05:56 |      | 06:58  |           |           | 08:00     | 08:06    | 08:47    |
|                     | 16:23 | 17:31   | 18:31    | 16    | 06:55 (1) | 20:36 | 21:35     | 22:08 | 21:43 | 20:35 |      | 19:13  |           |           | 17:55     | 15:53    | 15:37    |
| 24                  | 08:27 | 07:21   | 06:08    |       | 06:36 (1) | 05:47 | 04:45     | 04:23 | 04:58 | 05:58 |      | 07:00  |           |           | 08:02     | 08:08    | 08:47    |
|                     | 16:25 | 17:33   | 18:33    | 20    | 06:56 (1) | 20:38 | 21:37     | 22:08 | 21:41 | 20:33 |      | 19:11  |           |           | 17:53     | 15:51    | 15:38    |
| 25                  | 08:25 | 07:19   | 06:06    |       | 06:34 (1) | 05:45 | 04:43     | 04:24 | 05:00 | 06:00 |      | 07:02  |           |           | 08:04     | 08:10    | 08:48    |
|                     | 16:27 | 17:36   | 18:35    | 23    | 06:57 (1) | 20:40 | 21:39     | 22:08 | 21:39 | 20:30 |      | 19:08  |           |           | 17:50     | 15:50    | 15:38    |
| 26                  | 08:23 | 07:17   | 06:03    |       | 06:32 (1) | 05:43 | 04:42     | 04:24 | 05:02 | 06:02 |      | 07:04  |           |           | 07:06     | 08:12    | 08:48    |
|                     | 16:29 | 17:38   | 18:37    | 25    | 06:57 (1) | 20:42 | 21:40     | 22:08 | 21:37 | 20:28 |      | 19:05  |           |           | 16:48     | 15:48    | 15:39    |
| 27                  | 08:22 | 07:14   | 06:00    |       | 06:32 (1) | 05:40 | 04:40     | 04:25 | 05:03 | 06:04 |      | 07:06  |           |           | 07:09     | 08:14    | 08:48    |
|                     | 16:31 | 17:40   | 18:39    | 26    | 06:58 (1) | 20:44 | 21:42     | 22:08 | 21:36 | 20:25 |      | 19:03  |           |           | 16:46     | 15:47    | 15:40    |
| 28                  | 08:20 | 07:11   | 05:58    |       | 06:30 (1) | 05:38 | 04:39     | 04:25 | 05:05 | 06:06 |      | 07:08  |           |           | 07:11     | 08:16    | 08:48    |
|                     | 16:33 | 17:42   | 18:42    | 28    | 06:58 (1) | 20:46 | 21:44     | 22:08 | 21:34 | 20:23 |      | 19:00  |           |           | 16:43     | 15:46    | 15:41    |
| 29                  | 08:18 |         | 05:55    |       | 06:29 (1) | 05:35 | 04:37     | 04:26 | 05:07 | 06:08 |      | 07:10  |           |           | 07:13     | 08:18    | 08:48    |
|                     | 16:35 |         | 18:44    | 29    | 06:58 (1) | 20:48 | 21:45     | 22:07 | 21:32 | 20:20 |      | 18:57  |           |           | 16:41     | 15:45    | 15:42    |
| 30                  | 08:16 |         | 06:52    |       | 07:30 (1) | 05:33 | 04:36     | 04:27 | 05:09 | 06:10 |      | 07:12  |           |           | 07:15     | 08:19    | 08:48    |
|                     | 16:38 |         | 19:46    | 28    | 07:58 (1) | 20:50 | 21:47     | 22:07 | 21:30 | 20:17 |      | 18:55  |           |           | 16:39     | 15:44    | 15:43    |
| 31                  | 08:15 |         | 06:50    |       | 07:29 (1) |       | 04:35     |       | 05:11 | 06:12 |      |        |           |           | 07:17     |          | 08:48    |
|                     | 16:40 |         | 19:48    | 28    | 07:57 (1) |       | 21:48     |       | 21:28 | 20:15 |      |        |           |           | 16:36     |          | 15:44    |
| Potential sun hours | 235   | 265     | 365      |       | 425       |       | 507       | 528   | 529   | 470   | 385  |        | 324       | 248       |           | 216      |          |
| Total, worst case   |       |         | 234      |       | 171       |       |           |       |       |       | 409  |        |           |           |           |          |          |
| Sun reduction       |       |         | 0,39     |       | 0,48      |       |           |       |       |       | 0,43 |        |           |           |           |          |          |
| Oper. time red.     |       |         | 0,94     |       | 0,94      |       |           |       |       |       | 0,94 |        |           |           |           |          |          |
| Wind dir. red.      |       |         | 0,65     |       | 0,65      |       |           |       |       |       | 0,65 |        |           |           |           |          |          |
| Total reduction     |       |         | 0,24     |       | 0,29      |       |           |       |       |       | 0,26 |        |           |           |           |          |          |
| Total, real         |       |         | 56       |       | 50        |       |           |       |       |       | 107  |        |           |           |           |          |          |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AV - Zilites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April     | May       | June  |
|---------------------|---------|----------|-------|-----------|-----------|-------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47     | 07:18 (1) | 04:34 |
|                     | 15:45   | 16:42    | 17:44 | 19:50     | 07:44 (1) | 21:50 |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44     | 07:18 (1) | 04:33 |
|                     | 15:46   | 16:44    | 17:47 | 19:52     | 07:45 (1) | 21:51 |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42     | 07:17 (1) | 04:31 |
|                     | 15:48   | 16:46    | 17:49 | 19:54     | 07:44 (1) | 21:52 |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39     | 07:17 (1) | 04:30 |
|                     | 15:49   | 16:49    | 17:51 | 19:56     | 07:44 (1) | 21:54 |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36     | 07:17 (1) | 04:29 |
|                     | 15:50   | 16:51    | 17:53 | 19:58     | 07:44 (1) | 21:55 |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34     | 07:16 (1) | 04:29 |
|                     | 15:52   | 16:53    | 17:55 | 20:00     | 07:43 (1) | 21:56 |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31     | 07:17 (1) | 04:28 |
|                     | 15:53   | 16:55    | 17:57 | 20:02     | 07:42 (1) | 21:57 |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28     | 07:17 (1) | 04:27 |
|                     | 15:55   | 16:58    | 17:59 | 20:04     | 07:41 (1) | 21:58 |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26     | 07:18 (1) | 04:26 |
|                     | 15:56   | 17:00    | 18:02 | 20:07     | 07:40 (1) | 22:00 |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23     | 07:19 (1) | 04:26 |
|                     | 15:58   | 17:02    | 18:04 | 20:09     | 07:38 (1) | 22:01 |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21     | 07:20 (1) | 04:25 |
|                     | 16:00   | 17:04    | 18:06 | 20:11     | 07:36 (1) | 22:01 |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18     | 07:23 (1) | 04:24 |
|                     | 16:01   | 17:07    | 18:08 | 20:13     | 07:33 (1) | 22:02 |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15     |           | 04:24 |
|                     | 16:03   | 17:09    | 18:10 | 20:15     |           | 22:03 |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13     |           | 04:24 |
|                     | 16:05   | 17:11    | 18:12 | 20:17     |           | 22:04 |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10     |           | 04:23 |
|                     | 16:07   | 17:13    | 18:14 | 20:19     |           | 22:05 |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08     |           | 04:23 |
|                     | 16:09   | 17:16    | 18:16 | 20:21     |           | 22:05 |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05     |           | 04:23 |
|                     | 16:11   | 17:18    | 18:19 | 20:23     |           | 22:06 |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02     |           | 04:23 |
|                     | 16:13   | 17:20    | 18:21 | 20:25     |           | 22:06 |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00     |           | 04:23 |
|                     | 16:14   | 17:22    | 18:23 | 20:27     |           | 22:07 |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57     |           | 04:23 |
|                     | 16:16   | 17:25    | 18:25 | 20:29     |           | 22:07 |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55     |           | 04:23 |
|                     | 16:19   | 17:27    | 18:27 | 20:31     |           | 22:07 |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52     |           | 04:23 |
|                     | 16:21   | 17:29    | 18:29 | 20:34     |           | 22:08 |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50     |           | 04:23 |
|                     | 16:23   | 17:31    | 18:31 | 20:36     |           | 22:08 |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47     |           | 04:23 |
|                     | 16:25   | 17:33    | 18:33 | 20:38     |           | 22:08 |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45     |           | 04:24 |
|                     | 16:27   | 17:36    | 18:35 | 20:40     |           | 22:08 |
| 26                  | 08:23   | 07:17    | 06:03 | 06:30 (1) | 05:43     | 04:24 |
|                     | 16:29   | 17:38    | 18:37 | 06:36 (1) | 20:42     | 22:08 |
| 27                  | 08:22   | 07:14    | 06:00 | 06:28 (1) | 05:40     | 04:25 |
|                     | 16:31   | 17:40    | 18:39 | 06:40 (1) | 20:44     | 22:08 |
| 28                  | 08:20   | 07:11    | 05:58 | 06:25 (1) | 05:38     | 04:25 |
|                     | 16:33   | 17:42    | 18:42 | 06:42 (1) | 20:46     | 22:08 |
| 29                  | 08:18   |          | 05:55 | 06:22 (1) | 05:35     | 04:26 |
|                     | 16:35   |          | 18:44 | 06:42 (1) | 20:48     | 22:07 |
| 30                  | 08:16   |          | 06:52 | 07:20 (1) | 05:33     | 04:27 |
|                     | 16:38   |          | 19:46 | 07:44 (1) | 20:50     | 22:07 |
| 31                  | 08:15   |          | 06:50 | 07:19 (1) |           |       |
|                     | 16:40   |          | 19:48 | 07:44 (1) |           |       |
| Potential sun hours | 235     | 265      | 365   | 425       | 507       | 528   |
| Total, worst case   |         |          | 104   |           | 277       |       |
| Sun reduction       |         |          | 0,39  |           | 0,48      |       |
| Oper. time red.     |         |          | 0,94  |           | 0,94      |       |
| Wind dir. red.      |         |          | 0,66  |           | 0,66      |       |
| Total reduction     |         |          | 0,24  |           | 0,30      |       |
| Total, real         |         |          | 25    |           | 82        |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: AV - Zilites

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August | September | October      | November | December |
|---------------------|-------|--------|-----------|--------------|----------|----------|
| 1                   | 04:27 | 05:13  | 06:14     | 07:20 (1)    | 07:14    | 07:19    |
|                     | 22:07 | 21:26  | 20:12     | 13 07:33 (1) | 18:52    | 16:34    |
| 2                   | 04:28 | 05:15  | 06:16     | 07:18 (1)    | 07:16    | 07:22    |
|                     | 22:06 | 21:24  | 20:10     | 17 07:35 (1) | 18:49    | 16:32    |
| 3                   | 04:29 | 05:17  | 06:18     | 07:16 (1)    | 07:18    | 07:24    |
|                     | 22:06 | 21:22  | 20:07     | 21 07:37 (1) | 18:47    | 16:30    |
| 4                   | 04:30 | 05:18  | 06:20     | 07:15 (1)    | 07:20    | 07:26    |
|                     | 22:05 | 21:20  | 20:04     | 23 07:38 (1) | 18:44    | 16:27    |
| 5                   | 04:31 | 05:20  | 06:22     | 07:14 (1)    | 07:22    | 07:28    |
|                     | 22:04 | 21:18  | 20:02     | 24 07:38 (1) | 18:41    | 16:25    |
| 6                   | 04:32 | 05:22  | 06:24     | 07:13 (1)    | 07:24    | 07:30    |
|                     | 22:04 | 21:15  | 19:59     | 26 07:39 (1) | 18:39    | 16:23    |
| 7                   | 04:33 | 05:24  | 06:26     | 07:12 (1)    | 07:26    | 07:32    |
|                     | 22:03 | 21:13  | 19:56     | 27 07:39 (1) | 18:36    | 16:21    |
| 8                   | 04:34 | 05:26  | 06:28     | 07:12 (1)    | 07:29    | 07:35    |
|                     | 22:02 | 21:11  | 19:54     | 27 07:39 (1) | 18:33    | 16:19    |
| 9                   | 04:35 | 05:28  | 06:30     | 07:11 (1)    | 07:31    | 07:37    |
|                     | 22:01 | 21:09  | 19:51     | 28 07:39 (1) | 18:31    | 16:17    |
| 10                  | 04:37 | 05:30  | 06:32     | 07:10 (1)    | 07:33    | 07:39    |
|                     | 22:00 | 21:07  | 19:48     | 27 07:37 (1) | 18:28    | 16:15    |
| 11                  | 04:38 | 05:32  | 06:34     | 07:10 (1)    | 07:35    | 07:41    |
|                     | 21:59 | 21:04  | 19:46     | 27 07:37 (1) | 18:25    | 16:13    |
| 12                  | 04:39 | 05:34  | 06:36     | 07:10 (1)    | 07:37    | 07:43    |
|                     | 21:58 | 21:02  | 19:43     | 26 07:36 (1) | 18:23    | 16:11    |
| 13                  | 04:41 | 05:36  | 06:38     | 07:10 (1)    | 07:39    | 07:45    |
|                     | 21:57 | 21:00  | 19:40     | 25 07:35 (1) | 18:20    | 16:09    |
| 14                  | 04:42 | 05:38  | 06:40     | 07:11 (1)    | 07:41    | 07:48    |
|                     | 21:56 | 20:57  | 19:38     | 23 07:34 (1) | 18:18    | 16:07    |
| 15                  | 04:43 | 05:40  | 06:42     | 07:13 (1)    | 07:43    | 07:50    |
|                     | 21:54 | 20:55  | 19:35     | 19 07:32 (1) | 18:15    | 16:06    |
| 16                  | 04:45 | 05:42  | 06:44     | 07:15 (1)    | 07:45    | 07:52    |
|                     | 21:53 | 20:53  | 19:32     | 15 07:30 (1) | 18:13    | 16:04    |
| 17                  | 04:46 | 05:44  | 06:46     | 07:17 (1)    | 07:47    | 07:54    |
|                     | 21:52 | 20:50  | 19:30     | 11 07:28 (1) | 18:10    | 16:02    |
| 18                  | 04:48 | 05:46  | 06:48     |              | 07:49    | 07:56    |
|                     | 21:50 | 20:48  | 19:27     |              | 18:08    | 16:00    |
| 19                  | 04:50 | 05:48  | 06:50     |              | 07:51    | 07:58    |
|                     | 21:49 | 20:45  | 19:24     |              | 18:05    | 15:59    |
| 20                  | 04:51 | 05:50  | 06:52     |              | 07:54    | 08:00    |
|                     | 21:47 | 20:43  | 19:21     |              | 18:03    | 15:57    |
| 21                  | 04:53 | 05:52  | 06:54     |              | 07:56    | 08:02    |
|                     | 21:46 | 20:40  | 19:19     |              | 18:00    | 15:56    |
| 22                  | 04:55 | 05:54  | 06:56     |              | 07:58    | 08:04    |
|                     | 21:44 | 20:38  | 19:16     |              | 17:58    | 15:54    |
| 23                  | 04:56 | 05:56  | 06:58     |              | 08:00    | 08:06    |
|                     | 21:43 | 20:35  | 19:13     |              | 17:55    | 15:53    |
| 24                  | 04:58 | 05:58  | 07:00     |              | 08:02    | 08:08    |
|                     | 21:41 | 20:33  | 19:11     |              | 17:53    | 15:51    |
| 25                  | 05:00 | 06:00  | 07:02     |              | 08:04    | 08:10    |
|                     | 21:39 | 20:30  | 19:08     |              | 17:50    | 15:50    |
| 26                  | 05:02 | 06:02  | 07:04     |              | 07:06    | 08:12    |
|                     | 21:37 | 20:28  | 19:05     |              | 16:48    | 15:48    |
| 27                  | 05:03 | 06:04  | 07:06     |              | 07:09    | 08:14    |
|                     | 21:36 | 20:25  | 19:03     |              | 16:46    | 15:47    |
| 28                  | 05:05 | 06:06  | 07:08     |              | 07:11    | 08:16    |
|                     | 21:34 | 20:23  | 19:00     |              | 16:43    | 15:46    |
| 29                  | 05:07 | 06:08  | 07:10     |              | 07:13    | 08:18    |
|                     | 21:32 | 20:20  | 18:57     |              | 16:41    | 15:45    |
| 30                  | 05:09 | 06:10  | 07:12     |              | 07:15    | 08:19    |
|                     | 21:30 | 20:17  | 18:55     |              | 16:39    | 15:44    |
| 31                  | 05:11 | 06:12  | 07:24 (1) |              | 07:17    | 08:48    |
|                     | 21:28 | 20:15  | 07:30 (1) |              | 16:36    | 15:44    |
| Potential sun hours | 529   | 470    | 385       |              | 324      | 248      |
| Total, worst case   |       | 6      | 379       |              |          |          |
| Sun reduction       |       | 0,51   | 0,43      |              |          |          |
| Oper. time red.     |       | 0,94   | 0,94      |              |          |          |
| Wind dir. red.      |       | 0,66   | 0,66      |              |          |          |
| Total reduction     |       | 0,32   | 0,27      |              |          |          |
| Total, real         |       | 2      | 100       |              |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AW - Avotini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:20    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:46   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:57 | 21:53 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:05 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:16  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:33    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:45   | 07:57    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:56   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:02 | 21:59 | 21:04  | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:01   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:40 | 05:36  | 06:38     | 07:39   | 07:46    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:55 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:23 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:45    |
|                     | 16:14   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:16   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:18   | 17:27    | 18:27 | 20:32 | 21:32 | 22:08 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:47 | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:38    |
| 26                  | 08:24   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:07   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:49    |
|                     | 16:35   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:17   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:49    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:18  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AX - Biksti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:20<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:57 | 04:31<br>21:53 | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:30<br>21:54 | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:29<br>21:55 | 04:31<br>22:05 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:28<br>21:56 | 04:32<br>22:04 | 05:22<br>21:16 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:57<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:25<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:02 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:46<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:23 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:52<br>18:05 | 07:58<br>15:59 | 08:45<br>15:36 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:08 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:38 |
| 26                  | 08:24<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:07<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 07:09<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:12<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:49<br>15:42 |
| 30                  | 08:17<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:49<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AY - Tudalinas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:33    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:56   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:02 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:47 | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: AZ - Kalnares

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:57 | 04:31<br>21:53 | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:30<br>21:54 | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:29<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:16 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:56 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:36<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:02 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:17 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:55 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:16 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:08 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:38 |
| 26                  | 08:24<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 07:09<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:12<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:17<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:49<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BA - Su š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January |               | February |               | March | April | May   | June  |
|---------------------|---------|---------------|----------|---------------|-------|-------|-------|-------|
| 1                   | 08:48   | 09:39 (19)    | 08:13    | 08:46 (18)    | 07:09 | 06:47 | 05:30 | 04:33 |
|                     | 15:45   | 26 10:05 (20) | 16:42    | 44 10:16 (19) | 17:44 | 19:50 | 20:52 | 21:50 |
| 2                   | 08:48   | 09:39 (19)    | 08:11    | 08:44 (18)    | 07:06 | 06:44 | 05:28 | 04:32 |
|                     | 15:46   | 27 10:06 (20) | 16:44    | 47 10:16 (19) | 17:46 | 19:52 | 20:54 | 21:51 |
| 3                   | 08:48   | 09:38 (19)    | 08:09    | 08:42 (18)    | 07:04 | 06:42 | 05:26 | 04:31 |
|                     | 15:47   | 28 10:06 (20) | 16:46    | 49 10:15 (19) | 17:49 | 19:54 | 20:56 | 21:52 |
| 4                   | 08:47   | 09:39 (19)    | 08:07    | 08:39 (18)    | 07:01 | 06:39 | 05:24 | 04:30 |
|                     | 15:49   | 28 10:07 (20) | 16:49    | 51 10:14 (19) | 17:51 | 19:56 | 20:59 | 21:54 |
| 5                   | 08:47   | 09:38 (19)    | 08:05    | 08:37 (18)    | 06:59 | 06:36 | 05:21 | 04:29 |
|                     | 15:50   | 29 10:07 (20) | 16:51    | 52 10:13 (19) | 17:53 | 19:58 | 21:01 | 21:55 |
| 6                   | 08:46   | 09:38 (19)    | 08:03    | 08:37 (18)    | 06:56 | 06:34 | 05:19 | 04:28 |
|                     | 15:52   | 30 10:08 (20) | 16:53    | 50 10:12 (19) | 17:55 | 20:00 | 21:03 | 21:56 |
| 7                   | 08:46   | 09:37 (19)    | 08:01    | 08:37 (18)    | 06:53 | 06:31 | 05:17 | 04:27 |
|                     | 15:53   | 31 10:08 (20) | 16:55    | 48 10:11 (19) | 17:57 | 20:02 | 21:05 | 21:57 |
| 8                   | 08:45   | 09:37 (19)    | 07:59    | 08:36 (18)    | 06:51 | 06:28 | 05:15 | 04:27 |
|                     | 15:55   | 31 10:08 (20) | 16:58    | 45 10:08 (19) | 17:59 | 20:04 | 21:07 | 21:59 |
| 9                   | 08:45   | 09:37 (19)    | 07:56    | 08:36 (18)    | 06:48 | 06:26 | 05:13 | 04:26 |
|                     | 15:56   | 31 10:08 (20) | 17:00    | 38 10:05 (19) | 18:02 | 20:06 | 21:09 | 22:00 |
| 10                  | 08:44   | 09:37 (19)    | 07:54    | 08:36 (18)    | 06:46 | 06:23 | 05:10 | 04:25 |
|                     | 15:58   | 32 10:09 (20) | 17:02    | 27 09:03 (18) | 18:04 | 20:09 | 21:11 | 22:01 |
| 11                  | 08:43   | 09:37 (19)    | 07:52    | 08:36 (18)    | 06:43 | 06:20 | 05:08 | 04:25 |
|                     | 16:00   | 32 10:09 (20) | 17:04    | 26 09:02 (18) | 18:06 | 20:11 | 21:13 | 22:02 |
| 12                  | 08:42   | 09:37 (19)    | 07:50    | 08:37 (18)    | 06:40 | 06:18 | 05:06 | 04:24 |
|                     | 16:01   | 32 10:09 (20) | 17:06    | 25 09:02 (18) | 18:08 | 20:13 | 21:15 | 22:02 |
| 13                  | 08:41   | 09:37 (19)    | 07:48    | 08:37 (18)    | 06:38 | 06:15 | 05:04 | 04:24 |
|                     | 16:03   | 33 10:10 (19) | 17:09    | 24 09:01 (18) | 18:10 | 20:15 | 21:17 | 22:03 |
| 14                  | 08:40   | 09:36 (19)    | 07:45    | 08:38 (18)    | 06:35 | 06:13 | 05:02 | 04:23 |
|                     | 16:05   | 34 10:10 (19) | 17:11    | 23 09:01 (18) | 18:12 | 20:17 | 21:19 | 22:04 |
| 15                  | 08:39   | 09:37 (19)    | 07:43    | 08:39 (18)    | 06:32 | 06:10 | 05:00 | 04:23 |
|                     | 16:07   | 34 10:11 (19) | 17:13    | 22 09:01 (18) | 18:14 | 20:19 | 21:21 | 22:05 |
| 16                  | 08:38   | 09:37 (19)    | 07:41    | 08:39 (18)    | 06:30 | 06:07 | 04:58 | 04:23 |
|                     | 16:08   | 35 10:12 (19) | 17:15    | 20 08:59 (18) | 18:16 | 20:21 | 21:22 | 22:05 |
| 17                  | 08:37   | 09:37 (19)    | 07:38    | 08:41 (18)    | 06:27 | 06:05 | 04:57 | 04:23 |
|                     | 16:10   | 35 10:12 (19) | 17:18    | 17 08:58 (18) | 18:18 | 20:23 | 21:24 | 22:06 |
| 18                  | 08:35   | 09:37 (19)    | 07:36    | 08:43 (18)    | 06:24 | 06:02 | 04:55 | 04:22 |
|                     | 16:12   | 37 10:14 (19) | 17:20    | 12 08:55 (18) | 18:21 | 20:25 | 21:26 | 22:06 |
| 19                  | 08:34   | 09:37 (19)    | 07:34    | 08:48 (18)    | 06:22 | 06:00 | 04:53 | 04:22 |
|                     | 16:14   | 37 10:14 (19) | 17:22    | 3 08:51 (18)  | 18:23 | 20:27 | 21:28 | 22:07 |
| 20                  | 08:33   | 09:37 (19)    | 07:31    |               | 06:19 | 05:57 | 04:51 | 04:22 |
|                     | 16:16   | 37 10:14 (19) | 17:24    |               | 18:25 | 20:29 | 21:30 | 22:07 |
| 21                  | 08:31   | 09:37 (19)    | 07:29    |               | 06:16 | 05:55 | 04:49 | 04:23 |
|                     | 16:18   | 38 10:15 (19) | 17:27    |               | 18:27 | 20:31 | 21:32 | 22:07 |
| 22                  | 08:30   | 09:37 (19)    | 07:26    |               | 06:14 | 05:52 | 04:48 | 04:23 |
|                     | 16:20   | 39 10:16 (19) | 17:29    |               | 18:29 | 20:34 | 21:34 | 22:08 |
| 23                  | 08:28   | 09:37 (19)    | 07:24    |               | 06:11 | 05:50 | 04:46 | 04:23 |
|                     | 16:22   | 39 10:16 (19) | 17:31    |               | 18:31 | 20:36 | 21:35 | 22:08 |
| 24                  | 08:27   | 09:37 (19)    | 07:21    |               | 06:08 | 05:47 | 04:44 | 04:23 |
|                     | 16:25   | 39 10:16 (19) | 17:33    |               | 18:33 | 20:38 | 21:37 | 22:08 |
| 25                  | 08:25   | 09:37 (19)    | 07:19    |               | 06:06 | 05:45 | 04:43 | 04:24 |
|                     | 16:27   | 39 10:16 (19) | 17:35    |               | 18:35 | 20:40 | 21:39 | 22:08 |
| 26                  | 08:23   | 09:38 (19)    | 07:16    |               | 06:03 | 05:42 | 04:41 | 04:24 |
|                     | 16:29   | 38 10:16 (19) | 17:38    |               | 18:37 | 20:42 | 21:40 | 22:08 |
| 27                  | 08:22   | 09:38 (19)    | 07:14    |               | 06:00 | 05:40 | 04:40 | 04:24 |
|                     | 16:31   | 38 10:16 (19) | 17:40    |               | 18:39 | 20:44 | 21:42 | 22:08 |
| 28                  | 08:20   | 09:38 (19)    | 07:11    |               | 05:58 | 05:38 | 04:39 | 04:25 |
|                     | 16:33   | 38 10:16 (19) | 17:42    |               | 18:41 | 20:46 | 21:44 | 22:08 |
| 29                  | 08:18   | 09:39 (19)    |          |               | 05:55 | 05:35 | 04:37 | 04:26 |
|                     | 16:35   | 37 10:16 (19) |          |               | 18:44 | 20:48 | 21:45 | 22:07 |
| 30                  | 08:16   | 09:39 (19)    |          |               | 06:52 | 05:33 | 04:36 | 04:26 |
|                     | 16:37   | 37 10:16 (19) |          |               | 19:46 | 20:50 | 21:47 | 22:07 |
| 31                  | 08:15   | 08:48 (18)    |          |               | 06:50 |       | 04:35 |       |
|                     | 16:40   | 40 10:16 (19) |          |               | 19:48 |       | 21:48 |       |
| Potential sun hours | 235     |               | 265      |               | 365   | 425   | 507   | 529   |
| Total, worst case   |         | 1061          |          | 623           |       |       |       |       |
| Sun reduction       |         | 0,15          |          | 0,24          |       |       |       |       |
| Oper. time red.     |         | 0,94          |          | 0,94          |       |       |       |       |
| Wind dir. red.      |         | 0,60          |          | 0,60          |       |       |       |       |
| Total reduction     |         | 0,09          |          | 0,14          |       |       |       |       |
| Total, real         |         | 93            |          | 85            |       |       |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: BA - Su š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July  | August | September | October | November   | December      |
|---------------------|-------|--------|-----------|---------|------------|---------------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14   | 07:19      | 08:05 (18)    |
|                     | 22:07 | 21:26  | 20:12     | 18:52   | 16:34      | 27 08:32 (18) |
| 2                   | 04:28 | 05:14  | 06:16     | 07:16   | 07:22      | 08:06 (18)    |
|                     | 22:06 | 21:24  | 20:10     | 18:49   | 16:32      | 36 09:34 (19) |
| 3                   | 04:29 | 05:16  | 06:18     | 07:18   | 07:24      | 08:06 (18)    |
|                     | 22:06 | 21:22  | 20:07     | 18:46   | 16:30      | 43 09:37 (19) |
| 4                   | 04:30 | 05:18  | 06:20     | 07:20   | 07:26      | 08:06 (18)    |
|                     | 22:05 | 21:20  | 20:04     | 18:44   | 16:27      | 46 09:39 (19) |
| 5                   | 04:31 | 05:20  | 06:22     | 07:22   | 07:28      | 08:07 (18)    |
|                     | 22:04 | 21:18  | 20:02     | 18:41   | 16:25      | 48 09:41 (19) |
| 6                   | 04:32 | 05:22  | 06:24     | 07:24   | 07:30      | 08:07 (18)    |
|                     | 22:04 | 21:15  | 19:59     | 18:38   | 16:23      | 51 09:43 (19) |
| 7                   | 04:33 | 05:24  | 06:26     | 07:26   | 07:32      | 08:09 (18)    |
|                     | 22:03 | 21:13  | 19:56     | 18:36   | 16:21      | 51 09:44 (19) |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28   | 07:35      | 08:11 (18)    |
|                     | 22:02 | 21:11  | 19:54     | 18:33   | 16:19      | 50 09:45 (19) |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30   | 07:37      | 08:13 (18)    |
|                     | 22:01 | 21:09  | 19:51     | 18:31   | 16:17      | 48 09:45 (19) |
| 10                  | 04:36 | 05:30  | 06:32     | 07:33   | 07:39      | 08:16 (18)    |
|                     | 22:00 | 21:07  | 19:48     | 18:28   | 16:15      | 46 09:47 (19) |
| 11                  | 04:38 | 05:32  | 06:34     | 07:35   | 07:41      | 08:18 (18)    |
|                     | 21:59 | 21:04  | 19:46     | 18:25   | 16:13      | 43 09:47 (19) |
| 12                  | 04:39 | 05:34  | 06:36     | 07:37   | 07:43      | 08:21 (18)    |
|                     | 21:58 | 21:02  | 19:43     | 18:23   | 16:11      | 37 09:48 (19) |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39   | 07:45      | 09:11 (19)    |
|                     | 21:57 | 21:00  | 19:40     | 18:20   | 16:09      | 37 09:48 (19) |
| 14                  | 04:42 | 05:38  | 06:40     | 07:41   | 07:48      | 09:11 (19)    |
|                     | 21:56 | 20:57  | 19:38     | 18:18   | 16:07      | 37 09:48 (19) |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43   | 07:50      | 09:11 (19)    |
|                     | 21:55 | 20:55  | 19:35     | 18:15   | 16:05      | 38 09:49 (19) |
| 16                  | 04:45 | 05:42  | 06:44     | 07:45   | 07:52      | 09:11 (19)    |
|                     | 21:53 | 20:53  | 19:32     | 18:12   | 16:04      | 38 09:49 (19) |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47   | 07:54      | 09:12 (19)    |
|                     | 21:52 | 20:50  | 19:29     | 18:10   | 16:02      | 38 09:50 (19) |
| 18                  | 04:48 | 05:46  | 06:48     | 07:49   | 07:56      | 09:11 (19)    |
|                     | 21:50 | 20:48  | 19:27     | 18:07   | 16:00      | 39 09:50 (19) |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51   | 07:58      | 09:11 (19)    |
|                     | 21:49 | 20:45  | 19:24     | 18:05   | 15:59      | 39 09:50 (19) |
| 20                  | 04:51 | 05:50  | 06:52     | 07:54   | 08:00      | 09:12 (19)    |
|                     | 21:47 | 20:43  | 19:21     | 18:02   | 15:57      | 39 09:51 (19) |
| 21                  | 04:53 | 05:52  | 06:54     | 07:56   | 08:02      | 09:12 (19)    |
|                     | 21:46 | 20:40  | 19:19     | 18:00   | 15:55      | 39 09:51 (19) |
| 22                  | 04:54 | 05:54  | 06:56     | 07:58   | 08:04      | 09:13 (19)    |
|                     | 21:44 | 20:38  | 19:16     | 17:58   | 15:54      | 37 09:50 (19) |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00   | 08:06      | 09:13 (19)    |
|                     | 21:43 | 20:35  | 19:13     | 17:55   | 15:52      | 37 09:50 (19) |
| 24                  | 04:58 | 05:58  | 07:00     | 08:02   | 08:08      | 09:14 (19)    |
|                     | 21:41 | 20:33  | 19:11     | 17:53   | 15:51      | 37 09:51 (19) |
| 25                  | 05:00 | 06:00  | 07:02     | 08:04   | 08:10      | 09:15 (19)    |
|                     | 21:39 | 20:30  | 19:08     | 17:50   | 15:50      | 36 09:51 (19) |
| 26                  | 05:01 | 06:02  | 07:04     | 07:06   | 08:10 (18) | 08:12         |
|                     | 21:37 | 20:28  | 19:05     | 16:48   | 15:48      | 36 09:51 (19) |
| 27                  | 05:03 | 06:04  | 07:06     | 07:09   | 08:08 (18) | 08:14         |
|                     | 21:36 | 20:25  | 19:02     | 16:45   | 15:47      | 34 09:50 (19) |
| 28                  | 05:05 | 06:06  | 07:08     | 07:11   | 08:08 (18) | 08:16         |
|                     | 21:34 | 20:23  | 19:00     | 16:43   | 15:46      | 34 09:50 (19) |
| 29                  | 05:07 | 06:08  | 07:10     | 07:13   | 08:07 (18) | 08:18         |
|                     | 21:32 | 20:20  | 18:57     | 16:41   | 15:45      | 33 09:50 (19) |
| 30                  | 05:09 | 06:10  | 07:12     | 07:15   | 08:06 (18) | 08:19         |
|                     | 21:30 | 20:17  | 18:54     | 16:38   | 15:44      | 32 09:50 (20) |
| 31                  | 05:11 | 06:12  |           | 07:17   | 08:06 (18) |               |
|                     | 21:28 | 20:15  |           | 16:36   | 08:32 (18) |               |
| Potential sun hours | 530   | 470    | 385       | 324     | 248        | 216           |
| Total, worst case   |       |        |           | 163     | 1186       | 819           |
| Sun reduction       |       |        |           | 0,27    | 0,09       | 0,09          |
| Oper. time red.     |       |        |           | 0,94    | 0,94       | 0,94          |
| Wind dir. red.      |       |        |           | 0,60    | 0,60       | 0,60          |
| Total reduction     |       |        |           | 0,15    | 0,05       | 0,05          |
| Total, real         |       |        |           | 25      | 62         | 40            |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BB - Jaundruvas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March |      | April     |       | May       | June  | July  | August | September |       | October   | November  | December |
|---------------------|---------|----------|-------|------|-----------|-------|-----------|-------|-------|--------|-----------|-------|-----------|-----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 |      | 06:47     |       |           |       |       |        |           |       | 07:14     | 07:19     | 08:21    |
|                     | 15:45   | 16:42    | 17:44 |      | 19:50     | 15    | 07:45 (1) | 05:31 | 04:34 | 04:27  | 05:13     | 06:14 |           |           | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 |      | 06:44     |       | 08:00 (1) | 20:52 | 21:50 | 22:07  | 21:26     | 20:12 |           | 18:52     | 16:34    |
|                     | 15:46   | 16:44    | 17:47 |      | 19:52     | 9     | 07:48 (1) | 05:28 | 04:33 | 04:28  | 05:15     | 06:16 |           | 07:16     | 07:22    |
| 3                   | 08:48   | 08:09    | 07:04 |      | 06:42     |       | 07:57 (1) | 20:54 | 21:51 | 22:06  | 21:24     | 20:10 |           | 18:49     | 16:32    |
|                     | 15:48   | 16:46    | 17:49 |      | 19:54     |       |           | 05:26 | 04:31 | 04:29  | 05:16     | 06:18 |           | 07:18     | 07:24    |
| 4                   | 08:47   | 08:07    | 07:01 |      | 06:39     |       |           | 20:56 | 21:52 | 22:06  | 21:22     | 20:07 |           | 18:47     | 16:30    |
|                     | 15:49   | 16:49    | 17:51 |      | 19:56     |       |           | 05:24 | 04:30 | 04:30  | 05:18     | 06:20 |           | 07:20     | 07:26    |
| 5                   | 08:47   | 08:05    | 06:59 |      | 06:36     |       |           | 20:59 | 21:54 | 22:05  | 21:20     | 20:04 |           | 18:44     | 16:27    |
|                     | 15:50   | 16:51    | 17:53 |      | 19:58     |       |           | 05:22 | 04:29 | 04:31  | 05:20     | 06:22 |           | 07:22     | 07:28    |
| 6                   | 08:46   | 08:03    | 06:56 |      | 06:34     |       |           | 21:01 | 21:55 | 22:04  | 21:18     | 20:02 |           | 18:41     | 16:25    |
|                     | 15:52   | 16:53    | 17:55 |      | 20:00     |       |           | 05:19 | 04:29 | 04:32  | 05:22     | 06:24 |           | 07:24     | 07:30    |
| 7                   | 08:46   | 08:01    | 06:54 |      | 06:31     |       |           | 21:03 | 21:56 | 22:04  | 21:15     | 19:59 |           | 18:39     | 16:23    |
|                     | 15:53   | 16:55    | 17:57 |      | 20:02     |       |           | 05:17 | 04:28 | 04:33  | 05:24     | 06:26 |           | 07:26     | 07:32    |
| 8                   | 08:45   | 07:59    | 06:51 |      | 06:28     |       |           | 21:05 | 21:57 | 22:03  | 21:13     | 19:56 |           | 18:36     | 16:21    |
|                     | 15:55   | 16:58    | 17:59 |      | 20:04     |       |           | 05:15 | 04:27 | 04:34  | 05:26     | 06:28 |           | 07:29     | 07:35    |
| 9                   | 08:44   | 07:56    | 06:48 |      | 06:26     |       |           | 21:07 | 21:59 | 22:02  | 21:11     | 19:54 |           | 18:33     | 16:19    |
|                     | 15:56   | 17:00    | 18:02 |      | 20:07     |       |           | 05:13 | 04:26 | 04:35  | 05:28     | 06:30 |           | 07:31     | 07:37    |
| 10                  | 08:44   | 07:54    | 06:46 |      | 06:23     |       |           | 21:09 | 22:00 | 22:01  | 21:09     | 19:51 |           | 18:31     | 16:17    |
|                     | 15:58   | 17:02    | 18:04 |      | 20:09     |       |           | 05:11 | 04:26 | 04:37  | 05:30     | 06:32 |           | 07:33     | 07:39    |
| 11                  | 08:43   | 07:52    | 06:43 |      | 06:21     |       |           | 21:11 | 22:01 | 22:00  | 21:07     | 19:48 |           | 18:28     | 16:15    |
|                     | 16:00   | 17:04    | 18:06 |      | 20:11     |       |           | 05:09 | 04:25 | 04:38  | 05:32     | 06:34 | 07:39 (1) | 07:35     | 07:41    |
| 12                  | 08:42   | 07:50    | 06:40 |      | 06:18     |       |           | 21:13 | 22:01 | 21:59  | 21:04     | 19:46 | 12        | 07:51 (1) | 18:25    |
|                     | 16:01   | 17:07    | 18:08 |      | 20:13     |       |           | 05:07 | 04:24 | 04:39  | 05:34     | 06:36 | 07:37 (1) | 07:37     | 07:43    |
| 13                  | 08:41   | 07:48    | 06:38 |      | 06:15     |       |           | 21:15 | 22:02 | 21:58  | 21:02     | 19:43 | 16        | 07:53 (1) | 18:23    |
|                     | 16:03   | 17:09    | 18:10 |      | 20:15     |       |           | 05:05 | 04:24 | 04:40  | 05:36     | 06:38 | 07:35 (1) | 07:39     | 07:45    |
| 14                  | 08:40   | 07:45    | 06:35 |      | 06:13     |       |           | 21:17 | 22:03 | 21:57  | 21:00     | 19:40 | 19        | 07:54 (1) | 18:20    |
|                     | 16:05   | 17:11    | 18:12 |      | 20:17     |       |           | 05:03 | 04:24 | 04:42  | 05:38     | 06:40 | 07:33 (1) | 07:41     | 07:48    |
| 15                  | 08:39   | 07:43    | 06:32 |      | 06:10     |       |           | 21:19 | 22:04 | 21:56  | 20:57     | 19:38 | 22        | 07:55 (1) | 18:18    |
|                     | 16:07   | 17:13    | 18:14 |      | 20:19     |       |           | 05:01 | 04:23 | 04:43  | 05:40     | 06:42 | 07:32 (1) | 07:43     | 07:50    |
| 16                  | 08:38   | 07:41    | 06:30 |      | 06:08     |       |           | 21:21 | 22:05 | 21:54  | 20:55     | 19:35 | 24        | 07:56 (1) | 18:15    |
|                     | 16:09   | 17:16    | 18:16 |      | 20:21     |       |           | 04:59 | 04:23 | 04:45  | 05:42     | 06:44 | 07:31 (1) | 07:45     | 07:52    |
| 17                  | 08:37   | 07:38    | 06:27 |      | 06:05     |       |           | 21:22 | 22:05 | 21:53  | 20:53     | 19:32 | 25        | 07:56 (1) | 18:13    |
|                     | 16:11   | 17:18    | 18:19 | 7    | 07:02 (1) | 20:23 |           | 04:57 | 04:23 | 04:46  | 05:44     | 06:46 | 07:30 (1) | 07:47     | 07:54    |
| 18                  | 08:35   | 07:36    | 06:24 |      | 06:02     |       |           | 21:24 | 22:06 | 21:52  | 20:50     | 19:30 | 26        | 07:56 (1) | 18:10    |
|                     | 16:13   | 17:20    | 18:21 | 13   | 07:05 (1) | 20:25 |           | 04:55 | 04:23 | 04:48  | 05:46     | 06:48 | 07:30 (1) | 07:49     | 07:56    |
| 19                  | 08:34   | 07:34    | 06:22 |      | 06:00     |       |           | 21:26 | 22:06 | 21:50  | 20:48     | 19:27 | 26        | 07:56 (1) | 18:08    |
|                     | 16:14   | 17:22    | 18:23 | 17   | 07:06 (1) | 20:27 |           | 04:53 | 04:23 | 04:50  | 05:48     | 06:50 | 07:29 (1) | 07:51     | 07:58    |
| 20                  | 08:33   | 07:31    | 06:19 |      | 06:47 (1) | 05:57 |           | 21:28 | 22:07 | 21:49  | 20:45     | 19:24 | 27        | 07:56 (1) | 18:05    |
|                     | 16:16   | 17:25    | 18:25 | 21   | 07:08 (1) | 20:29 |           | 04:51 | 04:23 | 04:51  | 05:50     | 06:52 | 07:29 (1) | 07:54     | 08:00    |
| 21                  | 08:31   | 07:29    | 06:16 |      | 06:45 (1) | 05:55 |           | 21:30 | 22:07 | 21:47  | 20:43     | 19:21 | 27        | 07:56 (1) | 18:03    |
|                     | 16:19   | 17:27    | 18:27 | 23   | 07:08 (1) | 20:32 |           | 04:50 | 04:23 | 04:53  | 05:52     | 06:54 | 07:29 (1) | 07:56     | 08:02    |
| 22                  | 08:30   | 07:26    | 06:14 |      | 06:44 (1) | 05:52 |           | 21:32 | 22:07 | 21:46  | 20:40     | 19:19 | 26        | 07:55 (1) | 18:00    |
|                     | 16:21   | 17:29    | 18:29 | 25   | 07:09 (1) | 20:34 |           | 04:48 | 04:23 | 04:55  | 05:54     | 06:56 | 07:29 (1) | 07:58     | 08:04    |
| 23                  | 08:28   | 07:24    | 06:11 |      | 06:43 (1) | 05:50 |           | 21:34 | 22:08 | 21:44  | 20:38     | 19:16 | 25        | 07:54 (1) | 17:58    |
|                     | 16:23   | 17:31    | 18:31 | 26   | 07:09 (1) | 20:36 |           | 04:46 | 04:23 | 04:56  | 05:56     | 06:58 | 07:30 (1) | 08:00     | 08:06    |
| 24                  | 08:27   | 07:21    | 06:08 |      | 06:43 (1) | 05:47 |           | 21:35 | 22:08 | 21:43  | 20:35     | 19:13 | 23        | 07:53 (1) | 17:55    |
|                     | 16:25   | 17:33    | 18:33 | 26   | 07:09 (1) | 20:38 |           | 04:45 | 04:23 | 04:58  | 05:58     | 07:00 | 07:31 (1) | 08:02     | 08:08    |
| 25                  | 08:25   | 07:19    | 06:06 |      | 06:42 (1) | 05:45 |           | 21:37 | 22:08 | 21:41  | 20:33     | 19:11 | 21        | 07:52 (1) | 17:53    |
|                     | 16:27   | 17:36    | 18:35 | 27   | 07:09 (1) | 20:40 |           | 04:43 | 04:24 | 05:00  | 06:00     | 07:02 | 07:33 (1) | 08:04     | 08:10    |
| 26                  | 08:23   | 07:17    | 06:03 |      | 06:41 (1) | 05:43 |           | 21:39 | 22:08 | 21:39  | 20:30     | 19:08 | 17        | 07:50 (1) | 17:50    |
|                     | 16:29   | 17:38    | 18:37 | 27   | 07:08 (1) | 20:42 |           | 04:42 | 04:24 | 05:02  | 06:02     | 07:04 | 07:35 (1) | 07:06     | 08:12    |
| 27                  | 08:22   | 07:14    | 06:00 |      | 06:42 (1) | 05:40 |           | 21:40 | 22:08 | 21:37  | 20:28     | 19:05 | 12        | 07:47 (1) | 16:48    |
|                     | 16:31   | 17:40    | 18:39 | 26   | 07:08 (1) | 20:44 |           | 04:40 | 04:25 | 05:03  | 06:04     | 07:06 | 07:37 (1) | 07:09     | 08:14    |
| 28                  | 08:20   | 07:11    | 05:58 |      | 06:42 (1) | 05:38 |           | 21:42 | 22:08 | 21:36  | 20:25     | 19:03 | 7         | 07:44 (1) | 16:46    |
|                     | 16:33   | 17:42    | 18:42 | 25   | 07:07 (1) | 20:46 |           | 04:39 | 04:25 | 05:05  | 06:06     | 07:08 |           | 07:11     | 08:16    |
| 29                  | 08:18   |          | 05:55 |      | 06:42 (1) | 05:35 |           | 21:44 | 22:08 | 21:34  | 20:23     | 19:00 |           | 16:43     | 15:46    |
|                     | 16:35   |          | 18:44 | 23   | 07:05 (1) | 20:48 |           | 04:37 | 04:26 | 05:07  | 06:08     | 07:10 |           | 07:13     | 08:18    |
| 30                  | 08:16   |          | 06:52 |      | 07:43 (1) | 05:33 |           | 21:45 | 22:07 | 21:32  | 20:20     | 18:57 |           | 16:41     | 15:45    |
|                     | 16:38   |          | 19:46 | 22   | 08:05 (1) | 20:50 |           | 04:36 | 04:27 | 05:09  | 06:10     | 07:12 |           | 07:15     | 08:19    |
| 31                  | 08:15   |          | 06:50 |      | 07:44 (1) |       |           | 21:47 | 22:07 | 21:30  | 20:17     | 18:55 |           | 16:39     | 15:44    |
|                     | 16:40   |          | 19:48 | 19   | 08:03 (1) |       |           | 04:35 |       | 05:11  | 06:12     |       |           | 07:17     | 08:48    |
| Potential sun hours | 235     | 265      | 365   |      | 425       |       |           | 21:48 |       | 21:28  | 20:15     |       |           | 16:36     | 15:44    |
| Total, worst case   |         |          |       | 327  |           | 24    |           | 507   | 528   | 529    | 470       | 385   |           | 324       | 248      |
| Sun reduction       |         |          |       | 0,39 |           | 0,48  |           |       |       |        |           | 355   |           |           | 216      |
| Oper. time red.     |         |          |       | 0,94 |           | 0,94  |           |       |       |        |           | 0,43  |           |           |          |
| Wind dir. red.      |         |          |       | 0,64 |           | 0,64  |           |       |       |        |           | 0,94  |           |           |          |
| Total reduction     |         |          |       | 0,24 |           | 0,29  |           |       |       |        |           | 0,64  |           |           |          |
| Total, real         |         |          |       | 77   |           | 7     |           |       |       |        |           | 92    |           |           |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BC - Straumenini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:47 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:57 | 04:32<br>21:52 | 04:29<br>22:06 | 05:17<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:31<br>21:54 | 04:30<br>22:05 | 05:19<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:16 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:27<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>18:00 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:45<br>15:57 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:37<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:02 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:26 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:17 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:25<br>18:21 | 06:03<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:52<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:17 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:48<br>20:38 | 04:45<br>21:37 | 04:24<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:39 |
| 26                  | 08:24<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:07<br>16:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:40 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 07:09<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:12<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:36 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:17<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: BD - Krasta Ozoli

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

  
Idle start wind speed3,0m/s

|                     |       | January | February | March |           |       | April |           | May   | June  | July  | August | September |    | October   | November | December |
|---------------------|-------|---------|----------|-------|-----------|-------|-------|-----------|-------|-------|-------|--------|-----------|----|-----------|----------|----------|
| 1                   | 08:48 | 08:13   | 07:09    |       |           | 06:47 |       | 07:16 (1) | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     |    | 07:14     | 07:19    | 08:21    |
|                     | 15:45 | 16:42   | 17:44    |       |           | 19:50 | 24    | 07:40 (1) | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     |    | 18:52     | 16:34    | 15:43    |
| 2                   | 08:48 | 08:11   | 07:06    |       |           | 06:44 |       | 07:16 (1) | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     |    | 07:19 (1) | 07:16    | 07:22    |
|                     | 15:46 | 16:44   | 17:47    |       |           | 19:52 | 25    | 07:41 (1) | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 10 | 07:29 (1) | 18:49    | 16:32    |
| 3                   | 08:48 | 08:09   | 07:04    |       |           | 06:42 |       | 07:15 (1) | 05:26 | 04:31 | 04:29 | 05:17  | 06:18     |    | 07:17 (1) | 07:18    | 07:24    |
|                     | 15:48 | 16:46   | 17:49    |       |           | 19:54 | 25    | 07:40 (1) | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 14 | 07:31 (1) | 18:47    | 16:30    |
| 4                   | 08:47 | 08:07   | 07:01    |       |           | 06:39 |       | 07:16 (1) | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     |    | 07:15 (1) | 07:20    | 07:26    |
|                     | 15:49 | 16:49   | 17:51    |       |           | 19:56 | 25    | 07:41 (1) | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18 | 07:33 (1) | 18:44    | 16:28    |
| 5                   | 08:47 | 08:05   | 06:59    |       |           | 06:36 |       | 07:15 (1) | 05:22 | 04:29 | 04:31 | 05:20  | 06:22     |    | 07:13 (1) | 07:22    | 07:28    |
|                     | 15:50 | 16:51   | 17:53    |       |           | 19:58 | 25    | 07:40 (1) | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 21 | 07:34 (1) | 18:41    | 16:25    |
| 6                   | 08:46 | 08:03   | 06:56    |       |           | 06:34 |       | 07:15 (1) | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     |    | 07:12 (1) | 07:24    | 07:30    |
|                     | 15:52 | 16:53   | 17:55    |       |           | 20:00 | 23    | 07:38 (1) | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 22 | 07:34 (1) | 18:39    | 16:23    |
| 7                   | 08:46 | 08:01   | 06:54    |       |           | 06:31 |       | 07:16 (1) | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     |    | 07:11 (1) | 07:26    | 07:32    |
|                     | 15:53 | 16:55   | 17:57    |       |           | 20:02 | 22    | 07:38 (1) | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 24 | 07:35 (1) | 18:36    | 16:21    |
| 8                   | 08:45 | 07:59   | 06:51    |       |           | 06:28 |       | 07:17 (1) | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     |    | 07:10 (1) | 07:29    | 07:35    |
|                     | 15:55 | 16:58   | 17:59    |       |           | 20:04 | 19    | 07:36 (1) | 21:07 | 21:58 | 22:02 | 21:11  | 19:54     | 25 | 07:35 (1) | 18:33    | 16:19    |
| 9                   | 08:44 | 07:56   | 06:48    |       |           | 06:26 |       | 07:18 (1) | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     |    | 07:10 (1) | 07:31    | 07:37    |
|                     | 15:56 | 17:00   | 18:02    |       |           | 20:07 | 17    | 07:35 (1) | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 25 | 07:35 (1) | 18:31    | 16:17    |
| 10                  | 08:44 | 07:54   | 06:46    |       |           | 06:23 |       | 07:20 (1) | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     |    | 07:09 (1) | 07:33    | 07:39    |
|                     | 15:58 | 17:02   | 18:04    |       |           | 20:09 | 12    | 07:32 (1) | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 25 | 07:34 (1) | 18:28    | 16:15    |
| 11                  | 08:43 | 07:52   | 06:43    |       |           | 06:21 |       | 07:23 (1) | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     |    | 07:09 (1) | 07:35    | 07:41    |
|                     | 16:00 | 17:04   | 18:06    |       |           | 20:11 | 5     | 07:28 (1) | 21:13 | 22:01 | 21:59 | 21:04  | 19:46     | 24 | 07:33 (1) | 18:25    | 16:13    |
| 12                  | 08:42 | 07:50   | 06:40    |       |           | 06:18 |       |           | 05:07 | 04:24 | 04:39 | 05:34  | 06:36     |    | 07:09 (1) | 07:37    | 07:43    |
|                     | 16:01 | 17:07   | 18:08    |       |           | 20:13 |       |           | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 24 | 07:33 (1) | 18:23    | 16:11    |
| 13                  | 08:41 | 07:48   | 06:38    |       |           | 06:15 |       |           | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     |    | 07:09 (1) | 07:39    | 07:45    |
|                     | 16:03 | 17:09   | 18:10    |       |           | 20:15 |       |           | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 23 | 07:32 (1) | 18:20    | 16:09    |
| 14                  | 08:40 | 07:45   | 06:35    |       |           | 06:13 |       |           | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     |    | 07:11 (1) | 07:41    | 07:48    |
|                     | 16:05 | 17:11   | 18:12    |       |           | 20:17 |       |           | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 20 | 07:31 (1) | 18:18    | 16:07    |
| 15                  | 08:39 | 07:43   | 06:32    |       |           | 06:10 |       |           | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     |    | 07:13 (1) | 07:43    | 07:50    |
|                     | 16:07 | 17:13   | 18:14    |       |           | 20:19 |       |           | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 16 | 07:29 (1) | 18:15    | 16:06    |
| 16                  | 08:38 | 07:41   | 06:30    |       |           | 06:08 |       |           | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     |    | 07:15 (1) | 07:45    | 07:52    |
|                     | 16:09 | 17:16   | 18:16    |       |           | 20:21 |       |           | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 12 | 07:27 (1) | 18:13    | 16:04    |
| 17                  | 08:37 | 07:38   | 06:27    |       |           | 06:05 |       |           | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     |    | 07:17 (1) | 07:47    | 07:54    |
|                     | 16:11 | 17:18   | 18:19    |       |           | 20:23 |       |           | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 8  | 07:25 (1) | 18:10    | 16:02    |
| 18                  | 08:35 | 07:36   | 06:24    |       |           | 06:02 |       |           | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     |    | 07:17 (1) | 07:49    | 07:56    |
|                     | 16:13 | 17:20   | 18:21    |       |           | 20:25 |       |           | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     |    | 18:08     | 16:00    | 15:35    |
| 19                  | 08:34 | 07:34   | 06:22    |       |           | 06:00 |       |           | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     |    | 07:51     | 07:58    | 08:44    |
|                     | 16:15 | 17:22   | 18:23    |       |           | 20:27 |       |           | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     |    | 18:05     | 15:59    | 15:36    |
| 20                  | 08:33 | 07:31   | 06:19    |       |           | 05:57 |       |           | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     |    | 07:54     | 08:00    | 08:45    |
|                     | 16:17 | 17:25   | 18:25    |       |           | 20:29 |       |           | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     |    | 18:03     | 15:57    | 15:36    |
| 21                  | 08:31 | 07:29   | 06:16    |       |           | 05:55 |       |           | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     |    | 07:56     | 08:02    | 08:46    |
|                     | 16:19 | 17:27   | 18:27    |       |           | 20:32 |       |           | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     |    | 18:00     | 15:56    | 15:36    |
| 22                  | 08:30 | 07:26   | 06:14    |       |           | 05:52 |       |           | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     |    | 07:58     | 08:04    | 08:46    |
|                     | 16:21 | 17:29   | 18:29    |       |           | 20:34 |       |           | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     |    | 17:58     | 15:54    | 15:37    |
| 23                  | 08:28 | 07:24   | 06:11    |       |           | 05:50 |       |           | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     |    | 08:00     | 08:06    | 08:47    |
|                     | 16:23 | 17:31   | 18:31    |       |           | 20:36 |       |           | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     |    | 17:55     | 15:53    | 15:37    |
| 24                  | 08:27 | 07:21   | 06:08    |       |           | 05:47 |       |           | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     |    | 08:02     | 08:08    | 08:47    |
|                     | 16:25 | 17:33   | 18:33    |       |           | 20:38 |       |           | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     |    | 17:53     | 15:51    | 15:38    |
| 25                  | 08:25 | 07:19   | 06:06    |       |           | 05:45 |       |           | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     |    | 08:04     | 08:10    | 08:48    |
|                     | 16:27 | 17:36   | 18:35    |       |           | 20:40 |       |           | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     |    | 17:50     | 15:50    | 15:38    |
| 26                  | 08:23 | 07:17   | 06:03    |       | 06:30 (1) | 05:43 |       |           | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     |    | 07:06     | 08:12    | 08:48    |
|                     | 16:29 | 17:38   | 18:37    | 2     | 06:32 (1) | 20:42 |       |           | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     |    | 16:48     | 15:48    | 15:39    |
| 27                  | 08:22 | 07:14   | 06:00    |       | 06:28 (1) | 05:40 |       |           | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     |    | 07:09     | 08:14    | 08:48    |
|                     | 16:31 | 17:40   | 18:39    | 9     | 06:37 (1) | 20:44 |       |           | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     |    | 16:46     | 15:47    | 15:40    |
| 28                  | 08:20 | 07:11   | 05:58    |       | 06:25 (1) | 05:38 |       |           | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     |    | 07:11     | 08:16    | 08:48    |
|                     | 16:33 | 17:42   | 18:42    | 13    | 06:38 (1) | 20:46 |       |           | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     |    | 16:43     | 15:46    | 15:41    |
| 29                  | 08:18 |         | 05:55    |       | 06:22 (1) | 05:35 |       |           | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     |    | 07:13     | 08:18    | 08:48    |
|                     | 16:35 |         | 18:44    | 17    | 06:39 (1) | 20:48 |       |           | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     |    | 16:41     | 15:45    | 15:42    |
| 30                  | 08:16 |         | 06:52    |       | 07:20 (1) | 05:33 |       |           | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     |    | 07:15     | 08:19    | 08:48    |
|                     | 16:38 |         | 19:46    | 20    | 07:40 (1) | 20:50 |       |           | 21:47 | 22:07 | 21:30 | 20:17  | 18:55     |    | 16:39     | 15:44    | 15:43    |
| 31                  | 08:15 |         | 06:50    |       | 07:17 (1) |       |       |           | 04:35 |       | 05:11 | 06:12  |           |    | 07:17     |          | 08:48    |
|                     | 16:40 |         | 19:48    | 24    | 07:41 (1) |       |       |           | 21:48 |       | 21:28 | 20:15  |           |    | 16:36     |          | 15:44    |
| Potential sun hours |       | 235     | 265      | 365   |           | 425   |       |           | 507   | 528   | 529   | 470    | 385       |    | 324       | 248      | 216      |
| Total, worst case   |       |         |          | 85    |           | 222   |       |           |       |       |       |        | 311       |    |           |          |          |
| Sun reduction       |       |         |          | 0,39  |           | 0,48  |       |           |       |       |       |        | 0,43      |    |           |          |          |
| Oper. time red.     |       |         |          | 0,94  |           | 0,94  |       |           |       |       |       |        | 0,94      |    |           |          |          |
| Wind dir. red.      |       |         |          | 0,66  |           | 0,66  |       |           |       |       |       |        | 0,66      |    |           |          |          |
| Total reduction     |       |         |          | 0,24  |           | 0,30  |       |           |       |       |       |        | 0,27      |    |           |          |          |
| Total, real         |       |         |          | 20    |           | 66    |       |           |       |       |       |        | 83        |    |           |          |          |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BE - Galvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March |      | April      | May   | June  | July  | August | September |       | October |            | November   | December |       |
|---------------------|---------|----------|-------|------|------------|-------|-------|-------|--------|-----------|-------|---------|------------|------------|----------|-------|
| 1                   | 08:48   | 08:13    | 07:09 |      | 06:47      | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     |       | 07:14   |            | 07:45 (19) | 07:19    | 08:21 |
|                     | 15:45   | 16:42    | 17:44 |      | 19:50      | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     |       | 18:52   | 20         | 08:05 (19) | 16:34    | 15:43 |
| 2                   | 08:48   | 08:11    | 07:06 |      | 06:44      | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     |       | 07:16   |            | 07:47 (19) | 07:22    | 08:23 |
|                     | 15:46   | 16:44    | 17:46 |      | 19:52      | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     |       | 18:49   | 17         | 08:04 (19) | 16:32    | 15:42 |
| 3                   | 08:48   | 08:09    | 07:04 |      | 06:42      | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     |       | 07:18   |            | 07:49 (19) | 07:24    | 08:25 |
|                     | 15:48   | 16:46    | 17:49 |      | 19:54      | 20:57 | 21:53 | 22:06 | 21:22  | 20:07     |       | 18:46   | 14         | 08:03 (19) | 16:30    | 15:41 |
| 4                   | 08:47   | 08:07    | 07:01 |      | 06:39      | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     |       | 07:20   |            | 07:51 (19) | 07:26    | 08:26 |
|                     | 15:49   | 16:49    | 17:51 |      | 19:56      | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     |       | 18:44   | 10         | 08:01 (19) | 16:27    | 15:40 |
| 5                   | 08:47   | 08:05    | 06:59 |      | 06:36      | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     |       | 07:22   |            | 07:53 (19) | 07:28    | 08:28 |
|                     | 15:50   | 16:51    | 17:53 |      | 19:58      | 21:01 | 21:55 | 22:05 | 21:18  | 20:02     |       | 18:41   | 5          | 07:58 (19) | 16:25    | 15:39 |
| 6                   | 08:46   | 08:03    | 06:56 |      | 06:34      | 05:19 | 04:28 | 04:32 | 05:22  | 06:24     |       | 07:24   |            | 07:30      | 08:29    |       |
|                     | 15:52   | 16:53    | 17:55 |      | 20:00      | 21:03 | 21:56 | 22:04 | 21:16  | 19:59     |       | 18:39   |            | 16:23      | 15:38    |       |
| 7                   | 08:46   | 08:01    | 06:54 |      | 06:31      | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     |       | 07:26   |            | 07:33      | 08:31    |       |
|                     | 15:53   | 16:55    | 17:57 |      | 20:02      | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     |       | 18:36   |            | 16:21      | 15:38    |       |
| 8                   | 08:45   | 07:59    | 06:51 |      | 06:28      | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     |       | 07:29   |            | 07:35      | 08:32    |       |
|                     | 15:55   | 16:58    | 17:59 |      | 20:04      | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     |       | 18:33   |            | 16:19      | 15:37    |       |
| 9                   | 08:45   | 07:56    | 06:48 |      | 07:16 (19) | 06:26 | 05:13 | 04:26 | 04:35  | 05:28     | 06:30 |         | 07:31      | 07:37      | 08:34    |       |
|                     | 15:56   | 17:00    | 18:02 | 5    | 07:21 (19) | 20:07 | 21:09 | 22:00 | 22:01  | 21:09     | 19:51 |         | 18:31      | 16:17      | 15:37    |       |
| 10                  | 08:44   | 07:54    | 06:46 |      | 07:14 (19) | 06:23 | 05:11 | 04:25 | 04:36  | 05:30     | 06:32 |         | 07:33      | 07:39      | 08:35    |       |
|                     | 15:58   | 17:02    | 18:04 | 10   | 07:24 (19) | 20:09 | 21:11 | 22:01 | 22:00  | 21:07     | 19:48 |         | 18:28      | 16:15      | 15:36    |       |
| 11                  | 08:43   | 07:52    | 06:43 |      | 07:11 (19) | 06:20 | 05:08 | 04:25 | 04:38  | 05:32     | 06:34 |         | 07:35      | 07:41      | 08:36    |       |
|                     | 16:00   | 17:04    | 18:06 | 14   | 07:25 (19) | 20:11 | 21:13 | 22:02 | 21:59  | 21:04     | 19:46 |         | 18:25      | 16:13      | 15:36    |       |
| 12                  | 08:42   | 07:50    | 06:40 |      | 07:08 (19) | 06:18 | 05:06 | 04:24 | 04:39  | 05:34     | 06:36 |         | 07:37      | 07:43      | 08:38    |       |
|                     | 16:01   | 17:07    | 18:08 | 17   | 07:25 (19) | 20:13 | 21:15 | 22:02 | 21:58  | 21:02     | 19:43 |         | 18:23      | 16:11      | 15:36    |       |
| 13                  | 08:41   | 07:48    | 06:38 |      | 07:06 (19) | 06:15 | 05:04 | 04:24 | 04:40  | 05:36     | 06:38 |         | 07:39      | 07:45      | 08:39    |       |
|                     | 16:03   | 17:09    | 18:10 | 20   | 07:26 (19) | 20:15 | 21:17 | 22:03 | 21:57  | 21:00     | 19:40 |         | 18:20      | 16:09      | 15:35    |       |
| 14                  | 08:40   | 07:45    | 06:35 |      | 07:03 (19) | 06:13 | 05:02 | 04:23 | 04:42  | 05:38     | 06:40 |         | 07:41      | 07:48      | 08:40    |       |
|                     | 16:05   | 17:11    | 18:12 | 23   | 07:26 (19) | 20:17 | 21:19 | 22:04 | 21:56  | 20:57     | 19:38 |         | 18:18      | 16:07      | 15:35    |       |
| 15                  | 08:39   | 07:43    | 06:32 |      | 07:02 (19) | 06:10 | 05:00 | 04:23 | 04:43  | 05:40     | 06:42 |         | 07:43      | 07:50      | 08:41    |       |
|                     | 16:07   | 17:13    | 18:14 | 24   | 07:26 (19) | 20:19 | 21:21 | 22:05 | 21:55  | 20:55     | 19:35 |         | 18:15      | 16:05      | 15:35    |       |
| 16                  | 08:38   | 07:41    | 06:30 |      | 07:02 (19) | 06:08 | 04:59 | 04:23 | 04:45  | 05:42     | 06:44 |         | 07:45      | 07:52      | 08:42    |       |
|                     | 16:09   | 17:16    | 18:16 | 23   | 07:25 (19) | 20:21 | 21:22 | 22:05 | 21:53  | 20:53     | 19:32 |         | 18:13      | 16:04      | 15:35    |       |
| 17                  | 08:37   | 07:38    | 06:27 |      | 07:03 (19) | 06:05 | 04:57 | 04:23 | 04:46  | 05:44     | 06:46 |         | 07:47      | 07:54      | 08:43    |       |
|                     | 16:10   | 17:18    | 18:19 | 22   | 07:25 (19) | 20:23 | 21:24 | 22:06 | 21:52  | 20:50     | 19:30 |         | 18:10      | 16:02      | 15:35    |       |
| 18                  | 08:35   | 07:36    | 06:24 |      | 07:02 (19) | 06:02 | 04:55 | 04:23 | 04:48  | 05:46     | 06:48 |         | 07:49      | 07:56      | 08:44    |       |
|                     | 16:12   | 17:20    | 18:21 | 22   | 07:24 (19) | 20:25 | 21:26 | 22:06 | 21:50  | 20:48     | 19:27 |         | 18:08      | 16:00      | 15:35    |       |
| 19                  | 08:34   | 07:34    | 06:22 |      | 07:03 (19) | 06:00 | 04:53 | 04:23 | 04:49  | 05:48     | 06:50 |         | 07:51      | 07:58      | 08:44    |       |
|                     | 16:14   | 17:22    | 18:23 | 20   | 07:23 (19) | 20:27 | 21:28 | 22:07 | 21:49  | 20:45     | 19:24 |         | 18:05      | 15:59      | 15:36    |       |
| 20                  | 08:33   | 07:31    | 06:19 |      | 07:04 (19) | 05:57 | 04:51 | 04:23 | 04:51  | 05:50     | 06:52 |         | 07:54      | 08:00      | 08:45    |       |
|                     | 16:16   | 17:24    | 18:25 | 18   | 07:22 (19) | 20:29 | 21:30 | 22:07 | 21:47  | 20:43     | 19:21 |         | 18:03      | 15:57      | 15:36    |       |
| 21                  | 08:31   | 07:29    | 06:16 |      | 07:05 (19) | 05:55 | 04:49 | 04:23 | 04:53  | 05:52     | 06:54 |         | 07:57 (19) | 07:56      | 08:02    | 08:46 |
|                     | 16:18   | 17:27    | 18:27 | 15   | 07:20 (19) | 20:32 | 21:32 | 22:08 | 21:46  | 20:40     | 19:19 | 2       | 07:59 (19) | 18:00      | 15:55    | 15:36 |
| 22                  | 08:30   | 07:26    | 06:14 |      | 07:06 (19) | 05:52 | 04:48 | 04:23 | 04:54  | 05:54     | 06:56 |         | 07:52 (19) | 07:58      | 08:04    | 08:46 |
|                     | 16:20   | 17:29    | 18:29 | 11   | 07:17 (19) | 20:34 | 21:34 | 22:08 | 21:44  | 20:38     | 19:16 | 11      | 08:03 (19) | 17:58      | 15:54    | 15:37 |
| 23                  | 08:28   | 07:24    | 06:11 |      |            | 05:50 | 04:46 | 04:23 | 04:56  | 05:56     | 06:58 |         | 07:49 (19) | 08:00      | 08:06    | 08:47 |
|                     | 16:23   | 17:31    | 18:31 |      |            | 20:36 | 21:35 | 22:08 | 21:43  | 20:35     | 19:13 | 16      | 08:05 (19) | 17:55      | 15:52    | 15:37 |
| 24                  | 08:27   | 07:22    | 06:08 |      |            | 05:47 | 04:45 | 04:23 | 04:58  | 05:58     | 07:00 |         | 07:47 (19) | 08:02      | 08:08    | 08:47 |
|                     | 16:25   | 17:33    | 18:33 |      |            | 20:38 | 21:37 | 22:08 | 21:41  | 20:33     | 19:11 | 19      | 08:06 (19) | 17:53      | 15:51    | 15:38 |
| 25                  | 08:25   | 07:19    | 06:06 |      |            | 05:45 | 04:43 | 04:24 | 05:00  | 06:00     | 07:02 |         | 07:46 (19) | 08:04      | 08:10    | 08:48 |
|                     | 16:27   | 17:36    | 18:35 |      |            | 20:40 | 21:39 | 22:08 | 21:39  | 20:30     | 19:08 | 21      | 08:07 (19) | 17:50      | 15:50    | 15:38 |
| 26                  | 08:24   | 07:17    | 06:03 |      |            | 05:42 | 04:42 | 04:24 | 05:01  | 06:02     | 07:04 |         | 07:45 (19) | 07:06      | 08:12    | 08:48 |
|                     | 16:29   | 17:38    | 18:37 |      |            | 20:42 | 21:40 | 22:08 | 21:37  | 20:28     | 19:05 | 22      | 08:07 (19) | 16:48      | 15:48    | 15:39 |
| 27                  | 08:22   | 07:14    | 06:00 |      |            | 05:40 | 04:40 | 04:25 | 05:03  | 06:04     | 07:06 |         | 07:44 (19) | 07:09      | 08:14    | 08:48 |
|                     | 16:31   | 17:40    | 18:39 |      |            | 20:44 | 21:42 | 22:08 | 21:36  | 20:25     | 19:03 | 23      | 08:07 (19) | 16:46      | 15:47    | 15:40 |
| 28                  | 08:20   | 07:11    | 05:58 |      |            | 05:38 | 04:39 | 04:25 | 05:05  | 06:06     | 07:08 |         | 07:44 (19) | 07:11      | 08:16    | 08:48 |
|                     | 16:33   | 17:42    | 18:42 |      |            | 20:46 | 21:44 | 22:08 | 21:34  | 20:23     | 19:00 | 23      | 08:07 (19) | 16:43      | 15:46    | 15:41 |
| 29                  | 08:18   |          | 05:55 |      |            | 05:35 | 04:37 | 04:26 | 05:07  | 06:08     | 07:10 |         | 07:43 (19) | 07:13      | 08:18    | 08:49 |
|                     | 16:35   |          | 18:44 |      |            | 20:48 | 21:45 | 22:07 | 21:32  | 20:20     | 18:57 | 24      | 08:07 (19) | 16:41      | 15:45    | 15:42 |
| 30                  | 08:17   |          | 06:52 |      |            | 05:33 | 04:36 | 04:26 | 05:09  | 06:10     | 07:12 |         | 07:43 (19) | 07:15      | 08:19    | 08:49 |
|                     | 16:38   |          | 19:46 |      |            | 20:50 | 21:47 | 22:07 | 21:30  | 20:17     | 18:55 | 23      | 08:06 (19) | 16:39      | 15:44    | 15:43 |
| 31                  | 08:15   |          | 06:50 |      |            |       | 04:35 |       | 05:11  | 06:12     |       |         | 07:17      |            | 08:48    |       |
|                     | 16:40   |          | 19:48 |      |            |       | 21:48 |       | 21:28  | 20:15     |       |         | 16:36      |            | 15:44    |       |
| Potential sun hours | 235     | 265      | 365   |      | 425        | 507   | 529   | 530   | 470    | 385       |       | 324     |            | 248        | 216      |       |
| Total, worst case   |         |          |       | 244  |            |       |       |       |        | 184       |       | 66      |            |            |          |       |
| Sun reduction       |         |          |       | 0.39 |            |       |       |       |        | 0.43      |       | 0.27    |            |            |          |       |
| Oper. time red.     |         |          |       | 0.94 |            |       |       |       |        | 0.94      |       | 0.94    |            |            |          |       |
| Wind dir. red.      |         |          |       | 0.63 |            |       |       |       |        | 0.63      |       | 0.63    |            |            |          |       |
| Total reduction     |         |          |       | 0.23 |            |       |       |       |        | 0.25      |       | 0.16    |            |            |          |       |
| Total, real         |         |          |       | 56   |            |       |       |       |        | 47        |       | 11      |            |            |          |       |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BF - Muižnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:16  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:27   | 07:33    | 08:31    |
|                     | 15:53   | 16:56    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:01 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:33 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:47 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:22     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:17 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:07   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:17   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BG - Me ž mui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March | April | May   | June      |             |
|---------------------|---------|----------|-------|-------|-------|-----------|-------------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34     | 05:55 (1)   |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50     | 8 06:03 (1) |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33     |             |
|                     | 15:46   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51     |             |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 05:56 (1) | 04:31       |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:56 | 06:03 (1) | 21:52       |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 05:54 (1) | 04:30       |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 06:05 (1) | 21:54       |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 05:52 (1) | 04:29       |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:01 | 06:07 (1) | 21:55       |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 05:50 (1) | 04:29       |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 06:08 (1) | 21:56       |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 05:48 (1) | 04:28       |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 06:09 (1) | 21:57       |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 05:46 (1) | 04:27       |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:07 | 06:10 (1) | 21:58       |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 05:45 (1) | 04:26       |
|                     | 15:56   | 17:00    | 18:02 | 20:06 | 21:09 | 06:11 (1) | 21:59       |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 05:45 (1) | 04:26       |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 06:11 (1) | 22:00       |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 05:45 (1) | 04:25       |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 06:12 (1) | 22:01       |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 05:45 (1) | 04:24       |
|                     | 16:01   | 17:07    | 18:08 | 20:13 | 21:15 | 06:12 (1) | 22:02       |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 05:44 (1) | 04:24       |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 06:12 (1) | 22:03       |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 05:44 (1) | 04:24       |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 06:12 (1) | 22:04       |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 05:44 (1) | 04:23       |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 06:12 (1) | 22:05       |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 05:44 (1) | 04:23       |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 06:13 (1) | 22:05       |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 05:44 (1) | 04:23       |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 06:12 (1) | 22:06       |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 05:44 (1) | 04:23       |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 06:12 (1) | 22:06       |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 05:45 (1) | 04:23       |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 06:12 (1) | 22:07       |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 05:45 (1) | 04:23       |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 06:11 (1) | 22:07       |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 05:46 (1) | 04:23       |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:32 | 06:12 (1) | 22:07       |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 05:45 (1) | 04:23       |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:33 | 06:11 (1) | 22:08       |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 05:46 (1) | 04:23       |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 06:11 (1) | 22:08       |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:45 | 05:47 (1) | 04:23       |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 06:11 (1) | 22:08       |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 05:47 (1) | 04:24       |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 06:09 (1) | 22:08       |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42 | 05:48 (1) | 04:24       |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 06:09 (1) | 22:08       |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 05:49 (1) | 04:25       |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 06:09 (1) | 22:08       |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 04:39 | 05:51 (1) | 04:25       |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 06:08 (1) | 22:08       |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 05:51 (1) | 04:26       |
|                     | 16:35   |          | 18:44 | 20:48 | 21:45 | 06:06 (1) | 22:07       |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 05:52 (1) | 04:27       |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 06:06 (1) | 22:07       |
| 31                  | 08:15   |          | 06:50 |       | 04:35 | 05:54 (1) |             |
|                     | 16:40   |          | 19:48 |       | 21:48 | 06:04 (1) |             |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528       |             |
| Total, worst case   |         |          |       |       | 644   |           | 8           |
| Sun reduction       |         |          |       |       | 0,53  |           | 0,54        |
| Oper. time red.     |         |          |       |       | 0,94  |           | 0,94        |
| Wind dir. red.      |         |          |       |       | 0,68  |           | 0,68        |
| Total reduction     |         |          |       |       | 0,34  |           | 0,34        |
| Total, real         |         |          |       |       | 217   |           | 3           |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BG - Me ž mui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August             | September          | October        | November       | December       |
|---------------------|----------------|--------------------|--------------------|----------------|----------------|----------------|
| 1                   | 04:27<br>22:07 | 05:13<br>21:26     | 05:55 (1)<br>20:12 | 06:14<br>18:52 | 07:14<br>16:34 | 08:21<br>15:43 |
| 2                   | 04:28<br>22:06 | 05:15<br>21:24     | 05:55 (1)<br>20:10 | 06:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 04:29<br>22:06 | 05:17<br>21:22     | 05:55 (1)<br>20:07 | 06:18<br>18:47 | 07:24<br>16:30 | 08:24<br>15:41 |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20     | 05:56 (1)<br>20:04 | 06:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 04:31<br>22:04 | 05:20<br>21:18     | 05:56 (1)<br>20:02 | 06:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 04:32<br>22:04 | 05:22<br>21:15     | 05:58 (1)<br>19:59 | 06:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13     | 06:00 (1)<br>19:56 | 06:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11     | 06:01 (1)<br>19:54 | 06:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09     | 06:03 (1)<br>19:51 | 06:30<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 04:37<br>22:00 | 05:30<br>21:07     | 06:05 (1)<br>19:48 | 06:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 04:38<br>21:59 | 05:32<br>21:04     | 06:13 (1)<br>19:46 | 06:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 04:39<br>21:58 | 06:03 (1)<br>21:02 | 06:36<br>19:43     | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 04:41<br>21:57 | 06:03 (1)<br>21:00 | 06:38<br>19:40     | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:36 |
| 14                  | 04:42<br>21:56 | 06:13 (1)<br>20:57 | 06:40<br>19:38     | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 04:43<br>21:54 | 06:15 (1)<br>20:55 | 06:42<br>19:35     | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 04:45<br>21:53 | 06:15 (1)<br>20:52 | 06:44<br>19:32     | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 04:46<br>21:52 | 06:17 (1)<br>20:50 | 06:46<br>19:30     | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 04:48<br>21:50 | 05:59 (1)<br>20:48 | 06:48<br>19:27     | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                  | 04:50<br>21:49 | 05:58 (1)<br>20:45 | 06:50<br>19:24     | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 04:51<br>21:47 | 05:57 (1)<br>20:43 | 06:52<br>19:21     | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 04:53<br>21:46 | 06:20 (1)<br>20:40 | 06:54<br>19:19     | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 04:55<br>21:44 | 05:57 (1)<br>20:38 | 06:56<br>19:16     | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 04:56<br>21:43 | 05:56 (1)<br>20:35 | 06:58<br>19:13     | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 04:58<br>21:41 | 06:22 (1)<br>20:33 | 07:00<br>19:11     | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 05:00<br>21:39 | 05:55 (1)<br>20:30 | 07:02<br>19:08     | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:39 |
| 26                  | 05:02<br>21:37 | 06:22 (1)<br>20:28 | 07:04<br>19:05     | 08:06<br>17:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 05:03<br>21:36 | 05:54 (1)<br>20:25 | 07:06<br>19:03     | 08:08<br>17:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 05:05<br>21:34 | 06:22 (1)<br>20:23 | 07:08<br>19:00     | 08:10<br>17:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 05:07<br>21:32 | 05:55 (1)<br>20:20 | 07:10<br>18:57     | 08:13<br>17:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 05:09<br>21:30 | 06:23 (1)<br>20:17 | 07:12<br>18:55     | 08:15<br>17:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 05:11<br>21:28 | 05:55 (1)<br>20:15 | 07:17<br>18:55     | 08:20<br>17:36 | 08:24<br>15:44 | 08:48<br>15:44 |
| Potential sun hours | 529            | 470                | 385                | 324            | 248            | 216            |
| Total, worst case   | 444            | 209                |                    |                |                |                |
| Sun reduction       | 0,51           | 0,51               |                    |                |                |                |
| Oper. time red.     | 0,94           | 0,94               |                    |                |                |                |
| Wind dir. red.      | 0,68           | 0,68               |                    |                |                |                |
| Total reduction     | 0,32           | 0,33               |                    |                |                |                |
| Total, real         | 143            | 68                 |                    |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BH - Krastini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June      |                 |
|---------------------|---------|----------|-------|-------|-------|-----------|-----------------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34     | 05:53 (1)       |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50     | 14 06:07 (1)    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33     | 05:54 (1)       |
|                     | 15:46   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51     | 12 06:06 (1)    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 05:56 (1) | 04:31 05:57 (1) |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:56 | 06:03 (1) | 21:52 06:05 (1) |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 05:54 (1) | 04:30 05:59 (1) |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 06:06 (1) | 21:54 06:03 (1) |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 05:52 (1) | 04:29           |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:01 | 06:08 (1) | 21:55           |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 05:50 (1) | 04:29           |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 06:10 (1) | 21:56           |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 05:48 (1) | 04:28           |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 06:11 (1) | 21:57           |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 05:47 (1) | 04:27           |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:07 | 06:11 (1) | 21:58           |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 05:46 (1) | 04:26           |
|                     | 15:56   | 17:00    | 18:02 | 20:06 | 21:09 | 06:12 (1) | 21:59           |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 05:45 (1) | 04:26           |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 06:12 (1) | 22:00           |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 05:46 (1) | 04:25           |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 06:14 (1) | 22:01           |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 05:45 (1) | 04:24           |
|                     | 16:01   | 17:07    | 18:08 | 20:13 | 21:15 | 06:14 (1) | 22:02           |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 05:45 (1) | 04:24           |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 06:14 (1) | 22:03           |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 05:44 (1) | 04:24           |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 06:14 (1) | 22:04           |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 05:44 (1) | 04:23           |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 06:14 (1) | 22:05           |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 05:45 (1) | 04:23           |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 06:14 (1) | 22:05           |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 05:44 (1) | 04:23           |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 06:14 (1) | 22:06           |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 05:44 (1) | 04:23           |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 06:13 (1) | 22:06           |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 05:45 (1) | 04:23           |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 06:14 (1) | 22:07           |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 05:45 (1) | 04:23           |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 06:13 (1) | 22:07           |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 05:46 (1) | 04:23           |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:32 | 06:14 (1) | 22:07           |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 05:45 (1) | 04:23           |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:33 | 06:13 (1) | 22:08           |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 05:46 (1) | 04:23           |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 06:13 (1) | 22:08           |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:45 | 05:47 (1) | 04:23           |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 06:13 (1) | 22:08           |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 05:47 (1) | 04:24           |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 06:12 (1) | 22:08           |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42 | 05:48 (1) | 04:24           |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 06:12 (1) | 22:08           |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 05:49 (1) | 04:25           |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 06:11 (1) | 22:08           |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 04:39 | 05:50 (1) | 04:25           |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 06:11 (1) | 22:08           |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 05:50 (1) | 04:26           |
|                     | 16:35   |          | 18:44 | 20:48 | 21:45 | 06:09 (1) | 22:07           |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 05:51 (1) | 04:27           |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 06:09 (1) | 22:07           |
| 31                  | 08:15   |          | 06:50 |       | 04:35 | 05:52 (1) |                 |
|                     | 16:40   |          | 19:48 |       | 21:48 | 06:08 (1) |                 |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528       |                 |
| Total, worst case   |         |          |       |       | 700   |           | 38              |
| Sun reduction       |         |          |       |       | 0,53  |           | 0,54            |
| Oper. time red.     |         |          |       |       | 0,94  |           | 0,94            |
| Wind dir. red.      |         |          |       |       | 0,68  |           | 0,68            |
| Total reduction     |         |          |       |       | 0,34  |           | 0,34            |
| Total, real         |         |          |       |       | 236   |           | 13              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BH - Krastini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September          | October        | November       | December       |
|---------------------|----------------|----------------|--------------------|----------------|----------------|----------------|
| 1                   | 04:27<br>22:07 | 05:13<br>21:26 | 05:56 (1)<br>20:12 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 |
| 2                   | 04:28<br>22:06 | 05:15<br>21:24 | 05:56 (1)<br>20:10 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 |
| 3                   | 04:29<br>22:06 | 05:17<br>21:22 | 05:56 (1)<br>20:07 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20 | 05:56 (1)<br>20:04 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 |
| 5                   | 04:31<br>22:04 | 05:20<br>21:18 | 05:57 (1)<br>20:02 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 |
| 6                   | 04:32<br>22:04 | 05:22<br>21:15 | 05:58 (1)<br>19:59 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13 | 06:00 (1)<br>19:56 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:01 (1)<br>19:54 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:03 (1)<br>19:51 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 |
| 10                  | 04:37<br>22:00 | 05:30<br>21:07 | 06:05 (1)<br>19:48 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 |
| 11                  | 04:38<br>21:59 | 05:32<br>21:04 | 06:14 (1)<br>19:46 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43     | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 |
| 13                  | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40     | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 |
| 14                  | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38     | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35     | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 |
| 16                  | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32     | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30     | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 |
| 18                  | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27     | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 |
| 19                  | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24     | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21     | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 |
| 21                  | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19     | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 |
| 22                  | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16     | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 |
| 23                  | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13     | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11     | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 |
| 25                  | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08     | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 |
| 26                  | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05     | 07:04<br>19:05 | 08:12<br>17:48 | 08:18<br>15:49 |
| 27                  | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03     | 07:06<br>19:03 | 08:14<br>17:46 | 08:19<br>15:47 |
| 28                  | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00     | 07:08<br>19:00 | 08:16<br>17:43 | 08:19<br>15:46 |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57     | 07:10<br>18:57 | 08:18<br>17:41 | 08:19<br>15:45 |
| 30                  | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55     | 07:12<br>18:55 | 08:19<br>17:39 | 08:19<br>15:44 |
| 31                  | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>18:55     | 07:17<br>18:55 | 08:24<br>17:36 | 08:19<br>15:44 |
| Potential sun hours | 529            | 470            | 385                | 324            | 248            | 216            |
| Total, worst case   | 525            | 216            |                    |                |                |                |
| Sun reduction       | 0,51           | 0,51           |                    |                |                |                |
| Oper. time red.     | 0,94           | 0,94           |                    |                |                |                |
| Wind dir. red.      | 0,68           | 0,68           |                    |                |                |                |
| Total reduction     | 0,32           | 0,33           |                    |                |                |                |
| Total, real         | 169            | 70             |                    |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BI - Strauti

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:47 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:06 | 05:17<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:31<br>21:54 | 04:30<br>22:05 | 05:19<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>18:00 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:57 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:37<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:26 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:17 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:03<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:52<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:17 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 04:24<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:40 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 07:09<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:12<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:36 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BJ - Purenas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:27   | 07:33    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:01 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BK - Uplejas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:47 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:06 | 05:17<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:31<br>21:54 | 04:30<br>22:05 | 05:19<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>18:00 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:57 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:37<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:26 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:17 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:25<br>18:21 | 06:03<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:52<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:17 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
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| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 04:24<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
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| 29                  | 08:18<br>16:36 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BL - Bazes stacija

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:47 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:06 | 05:17<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:31<br>21:54 | 04:30<br>22:05 | 05:19<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:51 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>18:00 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:57 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:37<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:26 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:03<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:17 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:33 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 04:24<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:40 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 07:09<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:12<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:36 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:38<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BM - Spridi š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:27   | 07:33    | 08:31    |
|                     | 15:53   | 16:56    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:01 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:33 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:22     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BN - Klavas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February                    | March                          | April                          | May            | June           |                            |
|---------------------|----------------|-----------------------------|--------------------------------|--------------------------------|----------------|----------------|----------------------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 32           | 08:56 (22)<br>09:28 (23) 17:44 | 06:47<br>19:50                 | 05:31<br>20:52 | 04:34<br>21:49 | 05:20 (21)<br>65 06:25 (2) |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 33           | 08:56 (22)<br>09:29 (23) 17:46 | 06:44<br>19:52                 | 05:28<br>20:54 | 04:33<br>21:51 | 05:20 (21)<br>65 06:25 (2) |
| 3                   | 08:48<br>15:48 | 08:09<br>16:46 33           | 08:56 (23)<br>09:29 (23) 17:49 | 06:42<br>19:54                 | 05:26<br>20:56 | 04:31<br>21:52 | 05:20 (21)<br>65 06:25 (2) |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 35           | 08:55 (23)<br>09:30 (23) 17:51 | 06:39<br>19:56                 | 05:24<br>20:58 | 04:30<br>21:54 | 05:21 (21)<br>65 06:26 (2) |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 36           | 08:55 (23)<br>09:31 (23) 17:53 | 06:36<br>19:58                 | 05:21<br>21:00 | 04:29<br>21:55 | 05:20 (21)<br>66 06:26 (2) |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 37           | 08:55 (23)<br>09:32 (23) 17:55 | 06:34<br>20:00                 | 05:19<br>21:02 | 04:29<br>21:56 | 05:20 (21)<br>66 06:26 (2) |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 38           | 08:54 (23)<br>09:32 (23) 17:57 | 06:31<br>20:02                 | 05:17<br>21:04 | 04:28<br>21:57 | 05:21 (21)<br>66 06:27 (2) |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 38           | 08:54 (23)<br>09:32 (23) 17:59 | 06:28<br>20:04                 | 05:15<br>21:06 | 04:27<br>21:58 | 05:21 (21)<br>65 06:26 (2) |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 38           | 08:55 (23)<br>09:33 (23) 18:02 | 06:26<br>20:06                 | 05:13<br>21:09 | 04:26<br>21:59 | 05:21 (21)<br>65 06:26 (2) |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 38           | 08:54 (23)<br>09:32 (23) 18:04 | 06:23<br>20:08                 | 05:11<br>21:11 | 04:26<br>22:00 | 05:21 (21)<br>66 06:27 (2) |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 38           | 08:55 (23)<br>09:33 (23) 18:06 | 06:20<br>20:11                 | 05:09<br>21:13 | 04:25<br>22:01 | 05:22 (21)<br>65 06:27 (2) |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 38           | 08:55 (23)<br>09:33 (23) 18:08 | 06:18<br>20:13                 | 05:06<br>21:14 | 04:24<br>22:02 | 05:22 (21)<br>65 06:27 (2) |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 37           | 08:55 (23)<br>09:32 (23) 18:10 | 06:15<br>20:15                 | 05:04<br>21:16 | 04:24<br>22:03 | 05:22 (21)<br>65 06:27 (2) |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 36           | 08:56 (23)<br>09:32 (23) 18:12 | 06:13<br>20:17                 | 05:02<br>21:18 | 04:24<br>22:04 | 05:23 (21)<br>65 06:28 (2) |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 35           | 08:56 (23)<br>09:31 (23) 18:14 | 06:10<br>20:19                 | 05:01<br>21:20 | 04:23<br>22:04 | 05:22 (21)<br>65 06:27 (2) |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 34           | 08:57 (23)<br>09:31 (23) 18:16 | 06:07<br>20:21                 | 04:59<br>21:22 | 04:23<br>22:05 | 05:22 (21)<br>65 06:27 (2) |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 32           | 08:57 (23)<br>09:29 (23) 18:18 | 06:05<br>20:23                 | 04:57<br>21:24 | 04:23<br>22:06 | 05:23 (21)<br>65 06:28 (2) |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 31           | 08:58 (23)<br>09:29 (23) 18:21 | 06:02<br>20:25                 | 04:55<br>21:26 | 04:23<br>22:06 | 05:23 (21)<br>65 06:28 (2) |
| 19                  | 08:34<br>16:14 | 07:34<br>17:22 28           | 08:59 (23)<br>09:27 (23) 18:23 | 06:00<br>20:27                 | 04:53<br>21:28 | 04:23<br>22:07 | 05:23 (21)<br>65 06:28 (2) |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 25           | 09:01 (23)<br>09:26 (23) 18:25 | 06:56 (24)<br>07:24 (24) 20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 05:23 (21)<br>65 06:28 (2) |
| 21                  | 08:31<br>16:18 | 09:07 (22)<br>09:10 (22) 22 | 09:02 (23)<br>09:24 (23) 18:27 | 05:55 (24)<br>07:23 (24) 20:31 | 04:50<br>21:32 | 04:23<br>22:07 | 05:24 (21)<br>65 06:29 (2) |
| 22                  | 08:30<br>16:21 | 09:06 (22)<br>09:13 (22) 16 | 09:05 (23)<br>09:21 (23) 18:29 | 05:52 (24)<br>07:22 (24) 20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 05:24 (21)<br>65 06:29 (2) |
| 23                  | 08:28<br>16:23 | 09:04 (22)<br>09:14 (22) 10 | 09:09 (23)<br>09:16 (23) 7     | 06:55 (24)<br>07:21 (24) 20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 05:24 (21)<br>65 06:29 (2) |
| 24                  | 08:27<br>16:25 | 09:02 (22)<br>09:16 (22) 14 | 09:08 (23)<br>18:33 25         | 06:56 (24)<br>07:21 (24) 20:38 | 04:45<br>21:37 | 04:23<br>22:08 | 05:24 (21)<br>65 06:29 (2) |
| 25                  | 08:25<br>16:27 | 09:00 (22)<br>09:17 (22) 17 | 09:06 (23)<br>18:35 24         | 06:56 (24)<br>07:20 (24) 20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:25 (21)<br>65 06:30 (2) |
| 26                  | 08:23<br>16:29 | 08:58 (22)<br>09:18 (22) 20 | 09:03 (23)<br>18:37 22         | 06:56 (24)<br>07:18 (24) 20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:25 (21)<br>65 06:30 (2) |
| 27                  | 08:22<br>16:31 | 08:56 (22)<br>09:20 (23) 24 | 09:00 (23)<br>18:39 19         | 06:58 (24)<br>07:17 (24) 20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:25 (21)<br>65 06:30 (2) |
| 28                  | 08:20<br>16:33 | 08:56 (22)<br>09:22 (23) 26 | 09:08 (23)<br>18:41 15         | 06:59 (24)<br>07:14 (24) 20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:25 (21)<br>65 06:30 (2) |
| 29                  | 08:18<br>16:35 | 08:56 (22)<br>09:24 (23) 28 | 09:05 (23)<br>18:44 8          | 07:02 (24)<br>07:10 (24) 20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:26 (21)<br>65 06:31 (2) |
| 30                  | 08:16<br>16:38 | 08:56 (22)<br>09:25 (23) 29 | 09:06 (23)<br>19:46            | 05:33<br>20:50                 | 04:36<br>21:47 | 04:27<br>22:07 | 05:26 (21)<br>65 06:31 (2) |
| 31                  | 08:14<br>16:40 | 08:56 (22)<br>09:27 (23) 31 | 09:07 (23)<br>19:48            |                                | 04:35<br>21:48 | 04:27<br>22:07 | 05:26 (21)<br>65 06:31 (2) |
| Potential sun hours | 235            | 265                         | 365                            | 425                            | 507            | 528            | 1954                       |
| Total, worst case   | 209            | 737                         | 387                            |                                |                |                |                            |
| Sun reduction       | 0,15           | 0,24                        | 0,39                           |                                |                |                | 0,54                       |
| Oper. time red.     | 0,94           | 0,94                        | 0,94                           |                                |                |                | 0,94                       |
| Wind dir. red.      | 0,58           | 0,58                        | 0,63                           |                                |                |                | 0,68                       |
| Total reduction     | 0,08           | 0,13                        | 0,23                           |                                |                |                | 0,34                       |
| Total, real         | 18             | 97                          | 90                             |                                |                |                | 668                        |

Table layout: For each day in each month the following matrix apply

|              |                  |                      |                                 |                                  |
|--------------|------------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)  |                      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: BN - Klavas

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | July                 | August                           | September                       | October                           | November                          | December                          |
|---------------------|----------------------|----------------------------------|---------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 1                   | 04:27<br>22:06<br>65 | 05:26 (21)<br>06:31 (2)<br>21:26 | 05:59 (2)<br>06:26 (2)<br>20:12 | 07:14<br>18:52<br>13              | 07:45 (24)<br>07:58 (24)<br>16:34 | 08:24 (23)<br>09:02 (23)<br>15:43 |
| 2                   | 04:28<br>22:06<br>65 | 05:26 (21)<br>06:31 (2)<br>21:24 | 06:01 (2)<br>06:24 (2)<br>20:09 | 07:16<br>18:49<br>7               | 07:47 (24)<br>07:54 (24)<br>16:32 | 08:24 (23)<br>09:02 (23)<br>15:42 |
| 3                   | 04:29<br>22:05<br>66 | 05:26 (21)<br>06:32 (2)<br>21:22 | 06:02 (2)<br>06:22 (2)<br>20:07 | 07:18<br>18:46<br>7               | 07:24<br>16:30<br>38              | 08:24 (23)<br>09:02 (23)<br>15:41 |
| 4                   | 04:30<br>22:05<br>65 | 05:27 (21)<br>06:32 (2)<br>21:20 | 06:04 (2)<br>06:19 (2)<br>20:04 | 07:20<br>18:44<br>7               | 07:26<br>16:27<br>38              | 08:24 (23)<br>09:02 (23)<br>15:40 |
| 5                   | 04:31<br>22:04<br>65 | 05:27 (21)<br>06:32 (2)<br>21:17 | 06:09 (2)<br>06:14 (2)<br>20:02 | 07:22<br>18:41<br>7               | 07:28<br>16:25<br>37              | 08:25 (23)<br>09:02 (23)<br>15:39 |
| 6                   | 04:32<br>22:03<br>66 | 05:27 (21)<br>06:33 (2)<br>21:15 | 06:24<br>19:59<br>7             | 07:24<br>18:38<br>7               | 07:30<br>16:23<br>36              | 08:25 (23)<br>09:01 (23)<br>15:39 |
| 7                   | 04:33<br>22:03<br>66 | 05:27 (21)<br>06:33 (2)<br>21:13 | 06:26<br>19:56<br>7             | 07:26<br>18:36<br>7               | 07:32<br>16:21<br>36              | 08:25 (23)<br>09:01 (23)<br>15:38 |
| 8                   | 04:34<br>22:02<br>66 | 05:27 (21)<br>06:33 (2)<br>21:11 | 06:28<br>19:54<br>7             | 07:28<br>18:33<br>7               | 07:35<br>16:19<br>35              | 08:26 (23)<br>09:01 (23)<br>15:37 |
| 9                   | 04:35<br>22:01<br>65 | 05:28 (21)<br>06:33 (2)<br>21:09 | 06:30<br>19:51<br>7             | 07:30<br>18:31<br>7               | 07:37<br>16:17<br>33              | 08:27 (23)<br>09:00 (23)<br>15:37 |
| 10                  | 04:37<br>22:00<br>65 | 05:28 (21)<br>06:33 (2)<br>21:06 | 06:32<br>19:48<br>7             | 07:33<br>18:28<br>7               | 07:39<br>16:15<br>33              | 08:27 (22)<br>09:00 (23)<br>15:36 |
| 11                  | 04:38<br>21:59<br>65 | 05:28 (21)<br>06:33 (2)<br>21:04 | 06:34<br>19:46<br>7             | 07:35<br>18:25<br>7               | 07:41<br>16:13<br>31              | 08:27 (22)<br>08:58 (23)<br>15:36 |
| 12                  | 04:39<br>21:58<br>65 | 05:28 (21)<br>06:33 (2)<br>21:02 | 06:36<br>19:43<br>7             | 07:37<br>18:23<br>7               | 07:43<br>16:11<br>30              | 08:27 (22)<br>08:57 (23)<br>15:36 |
| 13                  | 04:40<br>21:57<br>65 | 05:28 (21)<br>06:33 (2)<br>21:00 | 06:38<br>19:40<br>7             | 07:39<br>18:20<br>7               | 07:45<br>16:09<br>29              | 08:28 (22)<br>08:57 (23)<br>15:35 |
| 14                  | 04:42<br>21:56<br>65 | 05:29 (21)<br>06:34 (2)<br>20:57 | 06:40<br>19:38<br>7             | 07:41<br>18:18<br>7               | 07:47<br>16:07<br>27              | 08:28 (22)<br>08:55 (23)<br>15:35 |
| 15                  | 04:43<br>21:54<br>64 | 05:29 (21)<br>06:33 (2)<br>20:55 | 06:42<br>19:35<br>11            | 07:43 (24)<br>08:02 (24)<br>18:15 | 07:50<br>16:06<br>25              | 08:29 (22)<br>08:54 (23)<br>15:35 |
| 16                  | 04:45<br>21:53<br>64 | 05:29 (21)<br>06:33 (2)<br>20:52 | 06:44<br>19:32<br>16            | 07:48 (24)<br>08:04 (24)<br>18:13 | 07:52<br>16:04<br>22              | 08:30 (22)<br>08:52 (23)<br>15:35 |
| 17                  | 04:46<br>21:52<br>64 | 05:30 (21)<br>06:34 (2)<br>20:50 | 06:46<br>19:29<br>20            | 07:46 (24)<br>08:06 (24)<br>18:10 | 07:54<br>16:02<br>18              | 08:32 (22)<br>08:50 (22)<br>15:35 |
| 18                  | 04:48<br>21:50<br>63 | 05:30 (21)<br>06:33 (2)<br>20:48 | 06:48<br>19:27<br>23            | 07:44 (24)<br>08:07 (24)<br>18:07 | 07:56<br>16:00<br>15              | 08:35 (22)<br>08:50 (22)<br>15:35 |
| 19                  | 04:50<br>21:49<br>63 | 05:31 (21)<br>06:34 (2)<br>20:45 | 06:50<br>19:24<br>24            | 07:51<br>08:07 (24)<br>18:05      | 07:58<br>09:43 (23)<br>15:59      | 08:37 (22)<br>08:37 (22)<br>15:36 |
| 20                  | 04:51<br>21:47<br>62 | 05:31 (21)<br>06:33 (2)<br>20:43 | 06:52<br>19:24<br>26            | 07:53<br>08:07 (24)<br>18:02      | 08:00<br>09:45 (23)<br>15:59      | 08:39 (22)<br>08:49 (22)<br>15:36 |
| 21                  | 04:53<br>21:46<br>61 | 05:32 (21)<br>06:33 (2)<br>20:40 | 06:54<br>19:21<br>27            | 07:56<br>08:08 (24)<br>18:00      | 08:02<br>09:51 (23)<br>15:57      | 08:42 (22)<br>08:48 (22)<br>15:36 |
| 22                  | 04:54<br>21:44<br>61 | 05:32 (21)<br>06:33 (2)<br>20:38 | 06:56<br>19:19<br>28            | 07:58<br>08:08 (24)<br>17:58      | 08:04<br>09:54 (23)<br>15:56      | 08:44 (22)<br>08:44 (22)<br>15:36 |
| 23                  | 04:56<br>21:42<br>59 | 05:34 (21)<br>06:33 (2)<br>20:35 | 06:58<br>19:16<br>28            | 08:00<br>08:08 (24)<br>17:55      | 08:06<br>09:56 (23)<br>15:54      | 08:47<br>08:45 (22)<br>15:37      |
| 24                  | 04:58<br>21:41<br>57 | 05:35 (21)<br>06:32 (2)<br>20:33 | 07:00<br>19:13<br>28            | 08:02<br>08:08 (24)<br>17:53      | 08:08<br>09:57 (23)<br>15:53      | 08:47<br>08:47 (22)<br>15:37      |
| 25                  | 05:00<br>21:39<br>55 | 05:37 (21)<br>06:32 (2)<br>20:30 | 07:02<br>19:08<br>28            | 08:04<br>08:07 (24)<br>17:50      | 08:10<br>09:59 (23)<br>15:50      | 08:47<br>08:47 (22)<br>15:38      |
| 26                  | 05:02<br>21:37<br>52 | 05:39 (21)<br>06:32 (2)<br>20:28 | 07:04<br>19:05<br>27            | 07:06<br>08:06 (24)<br>16:48      | 08:12<br>08:27 (23)<br>15:48      | 08:48<br>08:48 (22)<br>15:39      |
| 27                  | 05:03<br>21:35<br>47 | 05:40 (21)<br>06:30 (2)<br>20:25 | 07:06<br>19:02<br>25            | 07:08<br>08:05 (24)<br>16:46      | 08:14<br>08:26 (23)<br>15:47      | 08:48<br>08:48 (22)<br>15:40      |
| 28                  | 05:05<br>21:34<br>39 | 05:43 (21)<br>06:30 (2)<br>20:22 | 07:08<br>19:00<br>24            | 07:11<br>08:04 (24)<br>16:43      | 08:16<br>09:02 (23)<br>15:46      | 08:48<br>08:48 (22)<br>15:41      |
| 29                  | 05:07<br>21:32<br>33 | 05:56 (2)<br>06:29 (2)<br>20:20  | 07:10<br>18:57<br>22            | 07:13<br>08:03 (24)<br>16:41      | 08:17<br>09:02 (23)<br>15:45      | 08:48<br>08:48 (22)<br>15:42      |
| 30                  | 05:09<br>21:30<br>32 | 05:56 (2)<br>06:28 (2)<br>20:17  | 07:12<br>18:54<br>18            | 07:15<br>08:01 (24)<br>16:39      | 08:19<br>08:24 (23)<br>15:44      | 08:48<br>08:48 (22)<br>15:43      |
| 31                  | 05:11<br>21:28<br>30 | 05:57 (2)<br>06:27 (2)<br>20:15  | 07:17<br>16:36<br>37            | 07:17<br>08:25 (23)<br>09:02 (23) | 08:25 (23)<br>15:44               | 08:48<br>15:44                    |
| Potential sun hours | 529                  | 470                              | 385                             | 324                               | 248                               | 216                               |
| Total, worst case   | 1820                 | 90                               | 375                             | 387                               | 586                               |                                   |
| Sun reduction       | 0,51                 | 0,51                             | 0,43                            | 0,27                              | 0,09                              |                                   |
| Oper. time red.     | 0,94                 | 0,94                             | 0,94                            | 0,94                              | 0,94                              |                                   |
| Wind dir. red.      | 0,68                 | 0,68                             | 0,63                            | 0,59                              | 0,58                              |                                   |
| Total reduction     | 0,32                 | 0,33                             | 0,26                            | 0,15                              | 0,05                              |                                   |
| Total, real         | 587                  | 29                               | 96                              | 58                                | 30                                |                                   |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BO - Kaupres

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June                     |
|---------------------|----------------|----------------|----------------|----------------|----------------|--------------------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 06:02 (24)<br>07:22 (23) |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 06:01 (24)<br>07:20 (23) |
| 3                   | 08:47<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 06:00 (24)<br>07:17 (23) |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 06:00 (24)<br>07:15 (23) |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:00 | 06:00 (24)<br>07:11 (23) |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:02 | 06:00 (24)<br>06:24 (24) |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 06:01 (24)<br>06:24 (24) |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 06:01 (24)<br>06:23 (24) |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:06 | 05:13<br>21:08 | 06:01 (24)<br>06:22 (24) |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 06:02 (24)<br>06:21 (24) |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:11 | 05:09<br>21:12 | 06:04 (24)<br>06:21 (24) |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:14 | 06:05 (24)<br>06:20 (24) |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:16 | 06:06 (24)<br>06:18 (24) |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:18 | 06:08 (24)<br>06:16 (24) |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 06:20 (24)<br>06:24 (24) |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:22 | 06:24 (24)<br>06:25 (24) |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 06:23 (24)<br>06:26 (24) |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 06:23 (24)<br>06:26 (24) |
| 19                  | 08:34<br>16:15 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 06:23 (24)<br>06:27 (24) |
| 20                  | 08:32<br>16:17 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 06:23 (24)<br>06:27 (24) |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 06:23 (24)<br>06:27 (24) |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 06:23 (24)<br>06:27 (24) |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 06:23 (24)<br>06:28 (24) |
| 24                  | 08:27<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 06:23 (24)<br>06:28 (24) |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:38 | 06:24 (24)<br>06:28 (24) |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 06:24 (24)<br>06:28 (24) |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 06:25 (24)<br>06:28 (24) |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 06:25 (24)<br>06:27 (24) |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 06:26 (24)<br>06:27 (24) |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 06:27 (24)<br>06:27 (24) |
| 31                  | 08:14<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                          |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528                      |
| Total, worst case   |                |                | 369            | 902            | 377            |                          |
| Sun reduction       |                |                | 0,39           | 0,48           | 0,53           |                          |
| Oper. time red.     |                |                | 0,94           | 0,94           | 0,94           |                          |
| Wind dir. red.      |                |                | 0,63           | 0,66           | 0,67           |                          |
| Total reduction     |                |                | 0,23           | 0,30           | 0,33           |                          |
| Total, real         |                |                | 85             | 270            | 126            |                          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BO - Kaupres

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September           | October        | November       | December       |
|---------------------|----------------|----------------|---------------------|----------------|----------------|----------------|
| 1                   | 04:27<br>22:06 | 05:13<br>21:26 | 06:15 (24)<br>20:12 | 06:14<br>18:52 | 07:14<br>16:34 | 08:21<br>15:43 |
| 2                   | 04:28<br>22:06 | 05:15<br>21:24 | 06:16 (24)<br>20:09 | 06:16<br>18:52 | 07:16<br>16:34 | 08:23<br>15:42 |
| 3                   | 04:29<br>22:05 | 05:17<br>21:22 | 06:18 (24)<br>20:07 | 06:18<br>18:46 | 07:18<br>16:30 | 08:24<br>15:41 |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20 | 06:19 (24)<br>20:04 | 06:20<br>18:44 | 07:20<br>16:27 | 08:26<br>15:40 |
| 5                   | 04:31<br>22:04 | 05:20<br>21:17 | 06:21 (24)<br>20:02 | 06:22<br>18:41 | 07:22<br>16:25 | 08:28<br>15:39 |
| 6                   | 04:32<br>22:03 | 05:22<br>21:15 | 06:23 (24)<br>19:59 | 06:24<br>18:38 | 07:24<br>16:23 | 08:29<br>15:39 |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13 | 06:25 (24)<br>19:56 | 06:26<br>18:36 | 07:26<br>16:21 | 08:31<br>15:38 |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28 (24)<br>19:54 | 06:28<br>18:33 | 07:28<br>16:19 | 08:32<br>15:37 |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30 (24)<br>19:51 | 06:30<br>18:31 | 07:30<br>16:17 | 08:33<br>15:37 |
| 10                  | 04:37<br>22:00 | 05:30<br>21:06 | 06:32 (24)<br>19:48 | 06:32<br>18:28 | 07:32<br>16:15 | 08:35<br>15:36 |
| 11                  | 04:38<br>21:59 | 05:32<br>21:04 | 06:34 (24)<br>19:46 | 06:34<br>18:25 | 07:34<br>16:13 | 08:36<br>15:36 |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36 (24)<br>19:43 | 06:36<br>18:23 | 07:36<br>16:11 | 08:37<br>15:36 |
| 13                  | 04:41<br>21:57 | 05:36<br>21:00 | 06:38 (24)<br>19:40 | 06:38<br>18:20 | 07:38<br>16:09 | 08:38<br>15:36 |
| 14                  | 04:42<br>21:55 | 05:38<br>20:57 | 06:40 (24)<br>19:38 | 06:40<br>18:18 | 07:40<br>16:07 | 08:40<br>15:35 |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42 (24)<br>19:35 | 06:42<br>18:15 | 07:42<br>16:06 | 08:41<br>15:35 |
| 16                  | 04:45<br>21:53 | 05:42<br>20:52 | 06:44 (24)<br>19:32 | 06:44<br>18:13 | 07:44<br>16:04 | 08:42<br>15:35 |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46 (24)<br>19:29 | 06:46<br>18:10 | 07:46<br>16:02 | 08:43<br>15:35 |
| 18                  | 04:48<br>21:50 | 05:46<br>20:48 | 06:48 (24)<br>19:27 | 06:48<br>18:08 | 07:48<br>16:00 | 08:44<br>15:36 |
| 19                  | 04:50<br>21:49 | 05:48<br>20:45 | 06:50 (24)<br>19:24 | 06:50<br>18:05 | 07:50<br>15:59 | 08:44<br>15:36 |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52 (24)<br>19:21 | 06:52<br>18:03 | 07:52<br>15:57 | 08:45<br>15:36 |
| 21                  | 04:53<br>21:46 | 05:52<br>20:40 | 06:54 (24)<br>19:19 | 06:54<br>18:00 | 07:54<br>15:56 | 08:46<br>15:36 |
| 22                  | 04:55<br>21:44 | 05:54<br>20:38 | 06:56 (24)<br>19:16 | 06:56<br>17:58 | 07:56<br>15:54 | 08:46<br>15:37 |
| 23                  | 04:56<br>21:42 | 05:56<br>20:35 | 06:58 (24)<br>19:13 | 06:58<br>17:55 | 07:58<br>15:53 | 08:47<br>15:37 |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 07:00 (24)<br>19:11 | 07:00<br>17:53 | 08:00<br>15:51 | 08:47<br>15:38 |
| 25                  | 05:00<br>21:39 | 06:00<br>20:30 | 07:02 (24)<br>19:08 | 07:02<br>17:50 | 08:02<br>15:50 | 08:47<br>15:39 |
| 26                  | 05:02<br>21:37 | 06:02<br>20:28 | 07:04 (24)<br>19:05 | 07:04<br>17:48 | 08:04<br>15:49 | 08:48<br>15:39 |
| 27                  | 05:03<br>21:35 | 06:04<br>20:25 | 07:06 (24)<br>19:02 | 07:06<br>17:46 | 08:06<br>15:47 | 08:48<br>15:40 |
| 28                  | 05:05<br>21:34 | 06:06<br>20:22 | 07:08 (24)<br>19:00 | 07:08<br>17:43 | 08:08<br>15:46 | 08:48<br>15:41 |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:10 (24)<br>18:57 | 07:10<br>17:41 | 08:10<br>15:45 | 08:48<br>15:42 |
| 30                  | 05:09<br>21:30 | 06:10<br>20:17 | 07:12 (24)<br>18:54 | 07:12<br>17:39 | 08:12<br>15:44 | 08:48<br>15:43 |
| 31                  | 05:11<br>21:28 | 06:12<br>20:15 | 07:14 (24)<br>18:51 | 07:14<br>17:36 | 08:14<br>15:43 | 08:48<br>15:44 |
| Potential sun hours | 529            | 470            | 385                 | 324            | 248            | 217            |
| Total, worst case   | 17             | 1142           | 453                 | 60             |                |                |
| Sun reduction       | 0,51           | 0,51           | 0,43                | 0,27           |                |                |
| Oper. time red.     | 0,94           | 0,94           | 0,94                | 0,94           |                |                |
| Wind dir. red.      | 0,67           | 0,66           | 0,64                | 0,63           |                |                |
| Total reduction     | 0,32           | 0,32           | 0,26                | 0,16           |                |                |
| Total, real         | 5              | 365            | 117                 | 10             |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BP - Kaupres 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June                     |
|---------------------|----------------|----------------|----------------|----------------|----------------|--------------------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 06:02 (24)<br>07:23 (23) |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 06:01 (24)<br>07:22 (23) |
| 3                   | 08:47<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 06:00 (24)<br>07:19 (23) |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 06:00 (24)<br>07:17 (23) |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:00 | 06:00 (24)<br>07:14 (23) |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:02 | 06:00 (24)<br>06:24 (24) |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 06:00 (24)<br>06:24 (24) |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 06:01 (24)<br>06:23 (24) |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:06 | 05:13<br>21:08 | 06:01 (24)<br>06:23 (24) |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 06:02 (24)<br>06:22 (24) |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:11 | 05:09<br>21:12 | 06:03 (24)<br>06:22 (24) |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:14 | 06:04 (24)<br>06:20 (24) |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:16 | 06:05 (24)<br>06:19 (24) |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:18 | 06:07 (24)<br>06:16 (24) |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 06:20 (24)<br>06:24 (24) |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:22 | 06:24 (24)<br>06:26 (24) |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 06:26 (24)<br>06:28 (24) |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 06:28 (24)<br>06:30 (24) |
| 19                  | 08:34<br>16:15 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 06:30 (24)<br>06:32 (24) |
| 20                  | 08:32<br>16:17 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 06:32 (24)<br>06:34 (24) |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 06:34 (24)<br>06:36 (24) |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 06:36 (24)<br>06:38 (24) |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 06:38 (24)<br>06:40 (24) |
| 24                  | 08:27<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 06:40 (24)<br>06:42 (24) |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:38 | 06:42 (24)<br>06:44 (24) |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 06:44 (24)<br>06:46 (24) |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 06:46 (24)<br>06:48 (24) |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 06:48 (24)<br>06:50 (24) |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 06:50 (24)<br>06:52 (24) |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 06:54 (24)<br>06:56 (24) |
| 31                  | 08:14<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 | 06:56 (24)<br>06:58 (24) |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528                      |
| Total, worst case   |                |                | 376            | 918            | 396            |                          |
| Sun reduction       |                |                | 0,39           | 0,48           | 0,53           |                          |
| Oper. time red.     |                |                | 0,94           | 0,94           | 0,94           |                          |
| Wind dir. red.      |                |                | 0,63           | 0,66           | 0,67           |                          |
| Total reduction     |                |                | 0,23           | 0,30           | 0,33           |                          |
| Total, real         |                |                | 86             | 275            | 132            |                          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BP - Kaupres 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July           | August         | September           | October        | November            | December            |
|---------------------|----------------|----------------|---------------------|----------------|---------------------|---------------------|
| 1                   | 04:27<br>22:06 | 05:13<br>21:26 | 06:15 (24)<br>20:12 | 06:14<br>18:52 | 06:56 (23)<br>18:23 | 07:14<br>16:34      |
| 2                   | 04:28<br>22:06 | 05:15<br>21:24 | 06:16 (24)<br>20:09 | 06:16<br>18:49 | 07:23 (23)<br>18:20 | 07:47 (22)<br>16:32 |
| 3                   | 04:29<br>22:05 | 05:17<br>21:22 | 06:18 (24)<br>20:07 | 06:18<br>18:46 | 07:24 (23)<br>18:15 | 07:49 (22)<br>16:30 |
| 4                   | 04:30<br>22:05 | 05:18<br>21:20 | 06:19 (24)<br>20:04 | 06:20<br>18:44 | 07:25 (23)<br>18:11 | 07:51 (22)<br>16:27 |
| 5                   | 04:31<br>22:04 | 05:20<br>21:17 | 06:21 (24)<br>20:02 | 06:22<br>18:41 | 07:26 (23)<br>18:08 | 07:52 (22)<br>16:25 |
| 6                   | 04:32<br>22:03 | 05:22<br>21:15 | 06:23 (24)<br>19:59 | 06:24<br>18:38 | 07:28 (23)<br>18:06 | 07:54 (22)<br>16:23 |
| 7                   | 04:33<br>22:03 | 05:24<br>21:13 | 06:25 (24)<br>19:56 | 06:26<br>18:36 | 07:30 (23)<br>18:04 | 07:56 (22)<br>16:21 |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:27 (24)<br>19:54 | 06:28<br>18:33 | 07:32 (23)<br>18:02 | 07:58 (22)<br>16:19 |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:29 (24)<br>19:51 | 06:30<br>18:31 | 07:34 (23)<br>18:00 | 07:59 (22)<br>16:17 |
| 10                  | 04:37<br>22:00 | 05:30<br>21:06 | 06:31 (24)<br>19:48 | 06:32<br>18:28 | 07:36 (23)<br>17:58 | 08:01 (22)<br>16:15 |
| 11                  | 04:38<br>21:59 | 05:32<br>21:04 | 06:33 (24)<br>19:46 | 06:34<br>18:25 | 07:38 (23)<br>17:56 | 08:03 (22)<br>16:13 |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:35 (24)<br>19:43 | 06:36<br>18:23 | 07:40 (23)<br>17:54 | 08:05 (22)<br>16:11 |
| 13                  | 04:41<br>21:57 | 05:36<br>21:00 | 06:37 (24)<br>19:40 | 06:38<br>18:20 | 07:42 (23)<br>17:52 | 08:07 (22)<br>16:09 |
| 14                  | 04:42<br>21:55 | 05:38<br>20:57 | 06:39 (24)<br>19:38 | 06:40<br>18:18 | 07:44 (23)<br>17:50 | 08:09 (22)<br>16:07 |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:41 (24)<br>19:35 | 06:42<br>18:15 | 07:46 (23)<br>17:48 | 08:11 (22)<br>16:05 |
| 16                  | 04:45<br>21:53 | 05:42<br>20:52 | 06:43 (24)<br>19:32 | 06:44<br>18:13 | 07:48 (23)<br>17:46 | 08:13 (22)<br>16:03 |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:45 (24)<br>19:29 | 06:46<br>18:10 | 07:50 (23)<br>17:44 | 08:15 (22)<br>16:01 |
| 18                  | 04:48<br>21:50 | 05:46<br>20:48 | 06:47 (24)<br>19:27 | 06:48<br>18:07 | 07:52 (23)<br>17:42 | 08:17 (22)<br>16:00 |
| 19                  | 04:50<br>21:49 | 05:48<br>20:45 | 06:49 (24)<br>19:24 | 06:50<br>18:05 | 07:54 (23)<br>17:40 | 08:19 (22)<br>15:58 |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:51 (24)<br>19:21 | 06:52<br>18:03 | 07:56 (23)<br>17:38 | 08:21 (22)<br>15:56 |
| 21                  | 04:53<br>21:46 | 05:52<br>20:40 | 06:53 (24)<br>19:19 | 06:54<br>18:00 | 07:58 (23)<br>17:36 | 08:23 (22)<br>15:54 |
| 22                  | 04:55<br>21:44 | 05:54<br>20:38 | 06:55 (24)<br>19:16 | 06:56<br>17:58 | 07:59 (23)<br>17:34 | 08:25 (22)<br>15:52 |
| 23                  | 04:56<br>21:42 | 05:56<br>20:35 | 06:57 (24)<br>19:13 | 06:58<br>17:55 | 08:01 (23)<br>17:32 | 08:27 (22)<br>15:50 |
| 24                  | 04:58<br>21:41 | 05:58<br>20:33 | 06:59 (24)<br>19:11 | 07:00<br>17:53 | 08:03 (23)<br>17:30 | 08:29 (22)<br>15:48 |
| 25                  | 05:00<br>21:39 | 06:00<br>20:30 | 07:00 (24)<br>19:08 | 07:02<br>17:50 | 08:05 (23)<br>17:28 | 08:31 (22)<br>15:46 |
| 26                  | 05:02<br>21:37 | 06:02<br>20:28 | 07:02 (24)<br>19:05 | 07:04<br>17:48 | 08:07 (23)<br>17:26 | 08:33 (22)<br>15:44 |
| 27                  | 05:03<br>21:35 | 06:04<br>20:25 | 07:04 (24)<br>19:02 | 07:06<br>17:46 | 08:09 (23)<br>17:24 | 08:35 (22)<br>15:42 |
| 28                  | 05:05<br>21:34 | 06:06<br>20:22 | 07:06 (24)<br>19:00 | 07:08<br>17:44 | 08:11 (23)<br>17:22 | 08:37 (22)<br>15:40 |
| 29                  | 05:07<br>21:32 | 06:08<br>20:20 | 07:08 (24)<br>18:57 | 07:10<br>17:42 | 08:13 (23)<br>17:20 | 08:39 (22)<br>15:38 |
| 30                  | 05:09<br>21:30 | 06:10<br>20:17 | 07:10 (24)<br>18:54 | 07:12<br>17:40 | 08:15 (23)<br>17:18 | 08:41 (22)<br>15:36 |
| 31                  | 05:11<br>21:28 | 06:12<br>20:15 | 07:12 (24)<br>18:51 | 07:14<br>17:38 | 08:17 (23)<br>17:16 | 08:43 (22)<br>15:34 |
| Potential sun hours | 529            | 470            | 385                 | 324            | 248                 | 217                 |
| Total, worst case   | 21             | 1172           | 457                 | 69             |                     |                     |
| Sun reduction       | 0,51           | 0,51           | 0,43                | 0,27           |                     |                     |
| Oper. time red.     | 0,94           | 0,94           | 0,94                | 0,94           |                     |                     |
| Wind dir. red.      | 0,67           | 0,66           | 0,64                | 0,63           |                     |                     |
| Total reduction     | 0,32           | 0,32           | 0,26                | 0,16           |                     |                     |
| Total, real         | 7              | 375            | 118                 | 11             |                     |                     |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BQ - Lici š

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:20    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:57 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:16  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:27   | 07:33    | 08:31    |
|                     | 15:53   | 16:56    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:05 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:45   | 07:57    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:05    | 18:06 | 20:11 | 21:13 | 22:02 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:46    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:33 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:55 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:22     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:17 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:24   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:07   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:17   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:18  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BR - Liepsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January |    | February   |    | March      |       | April      |            | May   |           | June       |              |            |
|---------------------|---------|----|------------|----|------------|-------|------------|------------|-------|-----------|------------|--------------|------------|
| 1                   | 08:48   |    | 08:13      |    | 09:05 (22) | 07:09 |            | 06:47      | 05:31 |           | 04:34      | 05:22 (21)   |            |
|                     | 15:45   |    | 16:42      | 39 | 09:44 (23) | 17:44 |            | 19:50      | 20:52 |           | 21:49      | 71 06:33 (2) |            |
| 2                   | 08:48   |    | 08:11      |    | 09:06 (22) | 07:06 |            | 06:44      | 05:28 |           | 04:32      | 05:22 (21)   |            |
|                     | 15:46   |    | 16:44      | 38 | 09:44 (23) | 17:46 |            | 19:52      | 20:54 |           | 21:51      | 71 06:33 (2) |            |
| 3                   | 08:48   |    | 08:09      |    | 09:05 (22) | 07:04 |            | 06:42      | 05:26 |           | 04:31      | 05:22 (21)   |            |
|                     | 15:48   |    | 16:46      | 39 | 09:44 (23) | 17:49 |            | 19:54      | 20:56 |           | 21:52      | 71 06:33 (2) |            |
| 4                   | 08:47   |    | 08:07      |    | 09:06 (23) | 07:01 |            | 06:39      | 05:24 |           | 04:30      | 05:23 (21)   |            |
|                     | 15:49   |    | 16:49      | 39 | 09:45 (23) | 17:51 |            | 19:56      | 20:58 |           | 21:54      | 71 06:34 (2) |            |
| 5                   | 08:47   |    | 08:05      |    | 09:07 (23) | 06:59 |            | 06:36      | 05:21 |           | 04:29      | 05:22 (21)   |            |
|                     | 15:50   |    | 16:51      | 38 | 09:45 (23) | 17:53 |            | 19:58      | 21:00 |           | 21:55      | 71 06:33 (2) |            |
| 6                   | 08:46   |    | 08:03      |    | 09:07 (23) | 06:56 |            | 06:34      | 05:19 |           | 04:29      | 05:22 (21)   |            |
|                     | 15:52   |    | 16:53      | 38 | 09:45 (23) | 17:55 |            | 20:00      | 21:02 |           | 21:56      | 71 06:33 (2) |            |
| 7                   | 08:46   |    | 08:01      |    | 09:06 (23) | 06:53 |            | 06:31      | 05:17 | 06:01 (2) | 04:28      | 05:23 (21)   |            |
|                     | 15:53   |    | 16:55      | 39 | 09:45 (23) | 17:57 |            | 20:02      | 21:04 | 13        | 21:57      | 71 06:34 (2) |            |
| 8                   | 08:45   |    | 07:58      |    | 09:07 (23) | 06:51 |            | 06:28      | 05:15 | 05:58 (2) | 04:27      | 05:23 (21)   |            |
|                     | 15:55   |    | 16:58      | 38 | 09:45 (23) | 17:59 |            | 20:04      | 21:06 | 19        | 21:58      | 71 06:34 (2) |            |
| 9                   | 08:44   |    | 07:56      |    | 09:08 (23) | 06:48 | 07:17 (24) | 06:26      | 05:13 | 05:56 (2) | 04:26      | 05:23 (21)   |            |
|                     | 15:56   |    | 17:00      | 37 | 09:45 (23) | 18:02 | 6          | 07:23 (24) | 20:06 | 21:09     | 23         | 70 06:33 (2) |            |
| 10                  | 08:44   |    | 07:54      |    | 09:07 (23) | 06:46 |            | 07:14 (24) | 06:23 | 05:11     | 05:54 (2)  | 04:26        | 05:23 (21) |
|                     | 15:58   |    | 17:02      | 37 | 09:44 (23) | 18:04 | 13         | 07:27 (24) | 20:08 | 21:11     | 27         | 71 06:34 (2) |            |
| 11                  | 08:43   |    | 07:52      |    | 09:08 (23) | 06:43 |            | 07:11 (24) | 06:20 | 05:09     | 05:52 (2)  | 04:25        | 05:24 (21) |
|                     | 16:00   |    | 17:04      | 36 | 09:44 (23) | 18:06 | 18         | 07:29 (24) | 20:11 | 21:12     | 30         | 71 06:35 (2) |            |
| 12                  | 08:42   |    | 07:50      |    | 09:09 (23) | 06:40 |            | 07:08 (24) | 06:18 | 05:06     | 05:52 (2)  | 04:24        | 05:24 (21) |
|                     | 16:01   |    | 17:07      | 35 | 09:44 (23) | 18:08 | 22         | 07:30 (24) | 20:13 | 21:14     | 32         | 70 06:34 (2) |            |
| 13                  | 08:41   |    | 07:47      |    | 09:10 (23) | 06:38 |            | 07:06 (24) | 06:15 | 05:04     | 05:50 (2)  | 04:24        | 05:24 (21) |
|                     | 16:03   |    | 17:09      | 32 | 09:42 (23) | 18:10 | 25         | 07:31 (24) | 20:15 | 21:16     | 35         | 71 06:35 (2) |            |
| 14                  | 08:40   |    | 07:45      |    | 09:11 (23) | 06:35 |            | 07:06 (24) | 06:13 | 05:02     | 05:49 (2)  | 04:24        | 05:25 (21) |
|                     | 16:05   |    | 17:11      | 31 | 09:42 (23) | 18:12 | 26         | 07:32 (24) | 20:17 | 21:18     | 37         | 70 06:35 (2) |            |
| 15                  | 08:39   |    | 07:43      |    | 09:11 (23) | 06:32 |            | 07:05 (24) | 06:10 | 05:01     | 05:48 (2)  | 04:23        | 05:24 (21) |
|                     | 16:07   |    | 17:13      | 29 | 09:40 (23) | 18:14 | 27         | 07:32 (24) | 20:19 | 21:20     | 38         | 70 06:34 (2) |            |
| 16                  | 08:38   |    | 07:41      |    | 09:13 (23) | 06:30 |            | 07:04 (24) | 06:07 | 04:59     | 05:32 (21) | 04:23        | 05:25 (21) |
|                     | 16:09   |    | 17:16      | 26 | 09:39 (23) | 18:16 | 28         | 07:32 (24) | 20:21 | 21:22     | 50         | 70 06:35 (2) |            |
| 17                  | 08:36   |    | 07:38      |    | 09:14 (23) | 06:27 |            | 07:04 (24) | 06:05 | 04:57     | 05:30 (21) | 04:23        | 05:25 (21) |
|                     | 16:11   | 4  | 09:18 (22) | 23 | 09:37 (23) | 18:18 | 28         | 07:32 (24) | 20:23 | 21:24     | 55         | 70 06:35 (2) |            |
| 18                  | 08:35   |    | 09:12 (22) |    | 09:17 (23) | 06:24 |            | 07:03 (24) | 06:02 | 04:55     | 05:28 (21) | 04:23        | 05:25 (21) |
|                     | 16:12   | 8  | 09:20 (22) | 18 | 09:35 (23) | 18:21 | 29         | 07:32 (24) | 20:25 | 21:26     | 60         | 70 06:35 (2) |            |
| 19                  | 08:34   |    | 09:11 (22) |    | 09:20 (23) | 06:22 |            | 07:03 (24) | 06:00 | 04:53     | 05:27 (21) | 04:23        | 05:25 (21) |
|                     | 16:14   | 11 | 09:22 (22) | 10 | 09:30 (23) | 18:23 | 28         | 07:31 (24) | 20:27 | 21:28     | 62         | 70 06:35 (2) |            |
| 20                  | 08:32   |    | 09:09 (22) |    |            | 06:19 |            | 07:03 (24) | 05:57 | 04:51     | 05:25 (21) | 04:23        | 05:25 (21) |
|                     | 16:16   | 19 | 09:28 (23) |    |            | 18:25 | 28         | 07:31 (24) | 20:29 | 21:30     | 64         | 70 06:35 (2) |            |
| 21                  | 08:31   |    | 09:07 (22) |    |            | 06:16 |            | 07:03 (24) | 05:55 | 04:50     | 05:25 (21) | 04:23        | 05:27 (21) |
|                     | 16:18   | 24 | 09:31 (23) |    |            | 18:27 | 27         | 07:30 (24) | 20:31 | 21:32     | 65         | 69 06:36 (2) |            |
| 22                  | 08:30   |    | 09:06 (22) |    |            | 06:14 |            | 07:03 (24) | 05:52 | 04:48     | 05:24 (21) | 04:23        | 05:27 (21) |
|                     | 16:21   | 27 | 09:33 (23) |    |            | 18:29 | 26         | 07:29 (24) | 20:33 | 21:33     | 66         | 69 06:36 (2) |            |
| 23                  | 08:28   |    | 09:04 (22) |    |            | 06:11 |            | 07:04 (24) | 05:50 | 04:46     | 05:24 (21) | 04:23        | 05:26 (21) |
|                     | 16:23   | 31 | 09:35 (23) |    |            | 18:31 | 23         | 07:27 (24) | 20:36 | 21:35     | 67         | 70 06:36 (2) |            |
| 24                  | 08:27   |    | 09:03 (22) |    |            | 06:08 |            | 07:05 (24) | 05:47 | 04:45     | 05:23 (21) | 04:23        | 05:26 (21) |
|                     | 16:25   | 33 | 09:36 (23) |    |            | 18:33 | 21         | 07:26 (24) | 20:38 | 21:37     | 68         | 70 06:36 (2) |            |
| 25                  | 08:25   |    | 09:03 (22) |    |            | 06:06 |            | 07:06 (24) | 05:45 | 04:43     | 05:23 (21) | 04:24        | 05:27 (21) |
|                     | 16:27   | 34 | 09:37 (23) |    |            | 18:35 | 18         | 07:24 (24) | 20:40 | 21:39     | 68         | 70 06:37 (2) |            |
| 26                  | 08:23   |    | 09:03 (22) |    |            | 06:03 |            | 07:08 (24) | 05:42 | 04:42     | 05:23 (21) | 04:24        | 05:27 (21) |
|                     | 16:29   | 36 | 09:39 (23) |    |            | 18:37 | 13         | 07:21 (24) | 20:42 | 21:40     | 69         | 70 06:37 (2) |            |
| 27                  | 08:22   |    | 09:03 (22) |    |            | 06:00 |            |            | 05:40 | 04:40     | 05:23 (21) | 04:25        | 05:28 (21) |
|                     | 16:31   | 37 | 09:40 (23) |    |            | 18:39 |            |            | 20:44 | 21:42     | 69         | 70 06:38 (2) |            |
| 28                  | 08:20   |    | 09:03 (22) |    |            | 05:58 |            |            | 05:38 | 04:39     | 05:22 (21) | 04:25        | 05:27 (21) |
|                     | 16:33   | 38 | 09:41 (23) |    |            | 18:41 |            |            | 20:46 | 21:43     | 70         | 70 06:37 (2) |            |
| 29                  | 08:18   |    | 09:03 (22) |    |            | 05:55 |            |            | 05:35 | 04:37     | 05:22 (21) | 04:26        | 05:28 (21) |
|                     | 16:35   | 38 | 09:41 (23) |    |            | 18:44 |            |            | 20:48 | 21:45     | 70         | 70 06:38 (2) |            |
| 30                  | 08:16   |    | 09:04 (22) |    |            | 06:52 |            |            | 05:33 | 04:36     | 05:22 (21) | 04:27        | 05:28 (21) |
|                     | 16:38   | 38 | 09:42 (23) |    |            | 19:46 |            |            | 20:50 | 21:47     | 70         | 71 06:39 (2) |            |
| 31                  | 08:14   |    | 09:04 (22) |    |            | 06:50 |            |            |       | 04:35     | 05:22 (21) |              |            |
|                     | 16:40   | 39 | 09:43 (23) |    |            | 19:48 |            |            |       | 21:48     | 70         | 06:32 (2)    |            |
| Potential sun hours | 235     |    | 265        |    |            | 365   |            | 425        | 507   |           | 528        |              |            |
| Total, worst case   | 417     |    | 622        |    |            | 406   |            |            | 1297  |           | 2110       |              |            |
| Sun reduction       | 0,15    |    | 0,24       |    |            | 0,39  |            |            | 0,53  |           | 0,54       |              |            |
| Oper. time red.     | 0,94    |    | 0,94       |    |            | 0,94  |            |            | 0,94  |           | 0,94       |              |            |
| Wind dir. red.      | 0,58    |    | 0,58       |    |            | 0,63  |            |            | 0,68  |           | 0,68       |              |            |
| Total reduction     | 0,08    |    | 0,13       |    |            | 0,23  |            |            | 0,34  |           | 0,34       |              |            |
| Total, real         | 35      |    | 82         |    |            | 93    |            |            | 438   |           | 720        |              |            |

Table layout: For each day in each month the following matrix apply

|              |                  |                 |                      |                                 |                                |                                  |                                 |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BR - Liepsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | July           | August                  | September      | October            | November       | December            |
|---------------------|----------------|-------------------------|----------------|--------------------|----------------|---------------------|
| 1                   | 04:27<br>22:06 | 05:28 (21)<br>06:38 (2) | 05:13<br>21:26 | 06:02 (2)<br>20:12 | 07:14<br>18:52 | 08:38 (23)<br>15:43 |
| 2                   | 04:28<br>22:06 | 05:28 (21)<br>06:39 (2) | 05:15<br>21:24 | 06:03 (2)<br>20:09 | 07:16<br>18:49 | 08:37 (23)<br>15:42 |
| 3                   | 04:29<br>22:05 | 05:28 (21)<br>06:39 (2) | 05:16<br>21:22 | 06:04 (2)<br>20:07 | 07:18<br>18:46 | 08:37 (23)<br>15:41 |
| 4                   | 04:30<br>22:05 | 05:29 (21)<br>06:39 (2) | 05:18<br>21:20 | 06:06 (2)<br>20:04 | 07:20<br>18:44 | 08:37 (23)<br>15:40 |
| 5                   | 04:31<br>22:04 | 05:29 (21)<br>06:40 (2) | 05:20<br>21:17 | 06:08 (2)<br>20:02 | 07:22<br>18:41 | 08:37 (23)<br>15:39 |
| 6                   | 04:32<br>22:03 | 05:29 (21)<br>06:40 (2) | 05:22<br>21:15 | 06:11 (2)<br>19:59 | 07:24<br>18:38 | 08:37 (23)<br>15:39 |
| 7                   | 04:33<br>22:03 | 05:29 (21)<br>06:40 (2) | 05:24<br>21:13 | 06:17 (2)<br>19:56 | 07:26<br>18:36 | 08:36 (23)<br>15:38 |
| 8                   | 04:34<br>22:02 | 05:29 (21)<br>06:40 (2) | 05:26<br>21:11 | 06:18 (2)<br>19:54 | 07:28<br>18:33 | 08:37 (23)<br>15:37 |
| 9                   | 04:35<br>22:01 | 05:30 (21)<br>06:41 (2) | 05:28<br>21:09 | 06:30<br>19:51     | 07:30<br>18:31 | 08:36 (22)<br>15:37 |
| 10                  | 04:37<br>22:00 | 05:30 (21)<br>06:41 (2) | 05:30<br>21:06 | 06:32<br>19:48     | 07:33<br>18:28 | 08:36 (22)<br>15:36 |
| 11                  | 04:38<br>21:59 | 05:30 (21)<br>06:41 (2) | 05:32<br>21:04 | 06:34<br>19:46     | 07:35<br>18:25 | 08:35 (22)<br>15:36 |
| 12                  | 04:39<br>21:58 | 05:30 (21)<br>06:41 (2) | 05:34<br>21:02 | 06:36<br>19:43     | 07:37<br>18:23 | 08:35 (22)<br>15:36 |
| 13                  | 04:40<br>21:57 | 05:30 (21)<br>06:40 (2) | 05:36<br>21:00 | 06:38<br>19:40     | 07:39<br>18:20 | 08:35 (22)<br>15:35 |
| 14                  | 04:42<br>21:56 | 05:31 (21)<br>06:41 (2) | 05:38<br>20:57 | 06:40<br>19:38     | 07:41<br>18:18 | 08:35 (22)<br>15:35 |
| 15                  | 04:43<br>21:54 | 05:31 (21)<br>06:41 (2) | 05:40<br>20:55 | 06:42<br>19:35     | 07:43<br>18:15 | 08:36 (22)<br>15:35 |
| 16                  | 04:45<br>21:53 | 05:31 (21)<br>06:41 (2) | 05:42<br>20:52 | 06:44<br>19:32     | 07:45<br>18:13 | 08:36 (22)<br>15:35 |
| 17                  | 04:46<br>21:52 | 05:32 (21)<br>06:41 (2) | 05:44<br>20:50 | 06:46<br>19:29     | 07:47<br>18:10 | 08:36 (22)<br>15:35 |
| 18                  | 04:48<br>21:50 | 05:32 (21)<br>06:41 (2) | 05:46<br>20:48 | 06:48<br>19:27     | 07:49<br>18:07 | 08:37 (22)<br>15:35 |
| 19                  | 04:50<br>21:49 | 05:33 (21)<br>06:41 (2) | 05:48<br>20:45 | 06:50<br>19:24     | 07:51<br>18:05 | 08:38 (22)<br>15:36 |
| 20                  | 04:51<br>21:47 | 05:33 (21)<br>06:41 (2) | 05:50<br>20:43 | 06:52<br>19:21     | 07:53<br>18:02 | 08:39 (22)<br>15:36 |
| 21                  | 04:53<br>21:46 | 05:34 (21)<br>06:41 (2) | 05:52<br>20:40 | 06:54<br>19:19     | 07:56<br>18:00 | 08:42 (22)<br>15:36 |
| 22                  | 04:54<br>21:44 | 05:34 (21)<br>06:40 (2) | 05:54<br>20:38 | 06:56<br>19:16     | 07:58<br>17:58 | 08:44 (22)<br>15:37 |
| 23                  | 04:56<br>21:42 | 05:35 (21)<br>06:41 (2) | 05:56<br>20:35 | 06:58<br>19:13     | 08:00<br>17:55 | 08:46 (22)<br>15:37 |
| 24                  | 04:58<br>21:41 | 05:35 (21)<br>06:40 (2) | 05:58<br>20:33 | 07:00<br>19:11     | 08:02<br>17:53 | 08:48 (22)<br>15:38 |
| 25                  | 05:00<br>21:39 | 05:37 (21)<br>06:40 (2) | 06:00<br>20:30 | 07:02<br>19:08     | 08:04<br>17:50 | 08:51 (22)<br>15:38 |
| 26                  | 05:01<br>21:37 | 05:39 (21)<br>06:40 (2) | 06:02<br>20:28 | 07:04<br>19:05     | 08:06<br>17:48 | 08:57 (22)<br>15:38 |
| 27                  | 05:03<br>21:35 | 05:40 (21)<br>06:38 (2) | 06:04<br>20:25 | 07:06<br>19:02     | 08:08<br>17:46 | 08:58 (22)<br>15:40 |
| 28                  | 05:05<br>21:34 | 05:42 (21)<br>06:38 (2) | 06:06<br>20:22 | 07:08<br>19:00     | 08:11<br>17:43 | 08:58 (22)<br>15:41 |
| 29                  | 05:07<br>21:32 | 05:46 (21)<br>06:38 (2) | 06:08<br>20:20 | 07:10<br>18:57     | 08:13<br>17:41 | 08:58 (22)<br>15:42 |
| 30                  | 05:09<br>21:30 | 05:59 (2)<br>06:36 (2)  | 06:10<br>20:17 | 07:12<br>18:54     | 08:15<br>17:39 | 08:58 (22)<br>15:43 |
| 31                  | 05:11<br>21:28 | 06:00 (2)<br>06:36 (2)  | 06:12<br>20:15 |                    | 08:17<br>17:36 | 08:58 (22)<br>15:44 |
| Potential sun hours | 529            |                         | 470            | 385                | 324            | 216                 |
| Total, worst case   | 2014           |                         | 151            | 334                | 307            | 822                 |
| Sun reduction       | 0,51           |                         | 0,51           | 0,43               | 0,27           | 0,09                |
| Oper. time red.     | 0,94           |                         | 0,94           | 0,94               | 0,94           | 0,94                |
| Wind dir. red.      | 0,68           |                         | 0,68           | 0,63               | 0,59           | 0,58                |
| Total reduction     | 0,32           |                         | 0,33           | 0,25               | 0,15           | 0,05                |
| Total, real         | 649            |                         | 49             | 84                 | 46             | 41                  |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BS - Me ž vidi

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March | April | May        | June  | July  | August | September | October | November   | December |
|---------------------|---------|----------|-------|-------|------------|-------|-------|--------|-----------|---------|------------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 07:21 (23) | 05:31 | 04:34 | 04:27  | 05:13     | 06:14   | 07:14      | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 07:41 (23) | 20:52 | 21:50 | 22:06  | 21:26     | 20:12   | 18:52      | 16:34    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 07:22 (23) | 05:28 | 04:33 | 04:28  | 05:15     | 06:16   | 07:16      | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 07:41 (23) | 20:54 | 21:51 | 22:06  | 21:24     | 20:10   | 18:49      | 16:32    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 07:22 (23) | 05:26 | 04:32 | 04:29  | 05:17     | 06:18   | 07:18      | 08:24    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 07:40 (23) | 20:56 | 21:52 | 22:05  | 21:22     | 20:07   | 18:46      | 16:30    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 07:22 (23) | 05:24 | 04:31 | 04:30  | 05:18     | 06:20   | 07:20      | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 07:38 (23) | 20:58 | 21:54 | 22:05  | 21:20     | 20:04   | 18:44      | 16:28    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 07:24 (23) | 05:22 | 04:30 | 04:31  | 05:20     | 06:22   | 07:22      | 08:28    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 07:36 (23) | 21:00 | 21:55 | 22:04  | 21:17     | 20:02   | 18:41      | 16:25    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 07:27 (23) | 05:19 | 04:29 | 04:32  | 05:22     | 06:24   | 07:24      | 08:30    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 07:32 (23) | 21:02 | 21:56 | 22:04  | 21:15     | 19:59   | 18:39      | 16:23    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 |            | 05:17 | 04:28 | 04:33  | 05:24     | 06:26   | 07:22 (23) | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 |            | 21:05 | 21:57 | 22:03  | 21:13     | 19:56   | 18:36      | 16:21    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 |            | 05:15 | 04:27 | 04:34  | 05:26     | 06:28   | 07:19 (23) | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 |            | 21:07 | 21:58 | 22:02  | 21:11     | 19:54   | 18:33      | 16:19    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 |            | 05:13 | 04:26 | 04:35  | 05:28     | 06:30   | 07:17 (23) | 08:33    |
|                     | 15:57   | 17:00    | 18:02 | 20:06 |            | 21:09 | 21:59 | 22:01  | 21:09     | 19:51   | 18:31      | 16:17    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 |            | 05:11 | 04:26 | 04:37  | 05:30     | 06:32   | 07:15 (23) | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 |            | 21:11 | 22:00 | 22:00  | 21:06     | 19:48   | 18:28      | 16:15    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 |            | 05:09 | 04:25 | 04:38  | 05:32     | 06:34   | 07:14 (23) | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 |            | 21:13 | 22:01 | 21:59  | 21:04     | 19:46   | 18:25      | 16:13    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 |            | 05:07 | 04:25 | 04:39  | 05:34     | 06:36   | 07:13 (23) | 08:37    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 |            | 21:15 | 22:02 | 21:58  | 21:02     | 19:43   | 18:23      | 16:11    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 |            | 05:05 | 04:24 | 04:41  | 05:36     | 06:38   | 07:12 (23) | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 |            | 21:16 | 22:03 | 21:57  | 21:00     | 19:40   | 18:20      | 16:09    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 |            | 05:03 | 04:24 | 04:42  | 05:38     | 06:40   | 07:12 (23) | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 |            | 21:18 | 22:04 | 21:56  | 20:57     | 19:38   | 18:18      | 16:07    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 |            | 05:01 | 04:23 | 04:43  | 05:40     | 06:42   | 07:13 (23) | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 |            | 21:20 | 22:04 | 21:54  | 20:55     | 19:35   | 18:15      | 16:06    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 |            | 04:59 | 04:23 | 04:45  | 05:42     | 06:44   | 07:15 (23) | 08:42    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 |            | 21:22 | 22:05 | 21:53  | 20:52     | 19:32   | 18:13      | 16:04    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 |            | 04:57 | 04:23 | 04:46  | 05:44     | 06:46   | 07:17 (23) | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 |            | 21:24 | 22:06 | 21:52  | 20:50     | 19:29   | 18:10      | 16:02    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 |            | 04:55 | 04:23 | 04:48  | 05:46     | 06:48   | 07:19 (23) | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 |            | 21:26 | 22:06 | 21:50  | 20:48     | 19:27   | 18:08      | 16:00    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 |            | 04:53 | 04:23 | 04:50  | 05:48     | 06:50   | 07:21 (23) | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 |            | 21:28 | 22:07 | 21:49  | 20:45     | 19:24   | 18:05      | 15:59    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 |            | 04:51 | 04:23 | 04:51  | 05:50     | 06:52   | 07:23 (23) | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 |            | 21:30 | 22:07 | 21:47  | 20:43     | 19:21   | 18:03      | 15:57    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 |            | 04:50 | 04:23 | 04:53  | 05:52     | 06:54   | 07:24 (23) | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 |            | 21:32 | 22:07 | 21:46  | 20:40     | 19:19   | 18:00      | 15:56    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 |            | 04:48 | 04:23 | 04:55  | 05:54     | 06:56   | 07:25 (23) | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:33 |            | 21:33 | 22:07 | 21:44  | 20:38     | 19:16   | 17:58      | 15:54    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 |            | 04:46 | 04:23 | 04:56  | 05:56     | 06:58   | 07:26 (23) | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 |            | 21:35 | 22:08 | 21:42  | 20:35     | 19:13   | 17:55      | 15:53    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 06:36 (23) | 04:45 | 04:24 | 04:58  | 05:58     | 07:00   | 07:27 (23) | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 06:39 (23) | 21:37 | 22:08 | 21:41  | 20:33     | 19:11   | 17:53      | 15:51    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 06:33 (23) | 04:43 | 04:24 | 05:00  | 06:00     | 07:02   | 07:28 (23) | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 06:40 (23) | 21:39 | 22:08 | 21:39  | 20:30     | 19:08   | 17:50      | 15:50    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 06:30 (23) | 04:42 | 04:24 | 05:02  | 06:02     | 07:04   | 07:29 (23) | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 06:41 (23) | 21:40 | 22:08 | 21:37  | 20:28     | 19:05   | 16:48      | 15:49    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 06:28 (23) | 04:40 | 04:25 | 05:03  | 06:04     | 07:06   | 07:30 (23) | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 06:43 (23) | 21:42 | 22:08 | 21:35  | 20:25     | 19:03   | 16:46      | 15:47    |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 06:25 (23) | 04:39 | 04:25 | 05:05  | 06:06     | 07:08   | 07:31 (23) | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 06:43 (23) | 21:43 | 22:07 | 21:34  | 20:23     | 19:00   | 16:43      | 15:46    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 06:22 (23) | 04:37 | 04:26 | 05:07  | 06:08     | 07:10   | 07:33 (23) | 08:48    |
|                     | 16:35   |          | 18:44 | 21    | 06:43 (23) | 21:45 | 22:07 | 21:32  | 20:20     | 18:57   | 16:41      | 15:45    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 07:22 (23) | 04:36 | 04:27 | 05:09  | 06:10     | 07:12   | 07:35 (23) | 08:48    |
|                     | 16:38   |          | 19:46 | 21    | 07:43 (23) | 21:47 | 22:07 | 21:30  | 20:17     | 18:54   | 16:39      | 15:44    |
| 31                  | 08:14   |          | 06:50 | 05:31 | 07:21 (23) | 04:35 |       | 05:11  | 06:12     |         | 07:37      | 08:48    |
|                     | 16:40   |          | 19:48 | 21    | 07:42 (23) | 21:48 |       | 21:28  | 20:15     |         | 16:36      | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   |            | 507   | 528   | 529    | 470       | 385     | 324        | 248      |
| Total, worst case   |         |          | 117   | 90    |            |       |       |        |           | 209     |            |          |
| Sun reduction       |         |          | 0,39  | 0,48  |            |       |       |        |           | 0,43    |            |          |
| Oper. time red.     |         |          | 0,94  | 0,94  |            |       |       |        |           | 0,94    |            |          |
| Wind dir. red.      |         |          | 0,66  | 0,66  |            |       |       |        |           | 0,66    |            |          |
| Total reduction     |         |          | 0,24  | 0,30  |            |       |       |        |           | 0,26    |            |          |
| Total, real         |         |          | 28    | 27    |            |       |       |        |           | 55      |            |          |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: BT - Me ž a Mui ž a

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May                | June               |
|---------------------|----------------|----------------|----------------|----------------|--------------------|--------------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52     | 06:01 (1)<br>21:50 |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54     | 05:59 (1)<br>21:51 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56     | 05:57 (1)<br>21:52 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58     | 05:55 (1)<br>21:54 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01     | 05:55 (1)<br>21:55 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03     | 05:54 (1)<br>21:56 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05     | 05:54 (1)<br>21:57 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07     | 05:54 (1)<br>21:58 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:06 | 05:13<br>21:09     | 05:53 (1)<br>21:59 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11     | 05:53 (1)<br>22:00 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13     | 05:54 (1)<br>22:01 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15     | 05:54 (1)<br>22:02 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17     | 05:54 (1)<br>22:03 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19     | 05:55 (1)<br>22:04 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20     | 05:55 (1)<br>22:05 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:22     | 05:56 (1)<br>22:05 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24     | 05:56 (1)<br>22:06 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26     | 05:57 (1)<br>22:06 |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28     | 05:59 (1)<br>22:07 |
| 20                  | 08:33<br>16:17 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30     | 05:59 (1)<br>22:07 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:32     | 06:01 (1)<br>22:07 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:33     | 06:03 (1)<br>22:08 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35     | 06:11 (1)<br>22:08 |
| 24                  | 08:27<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37     | 06:12 (1)<br>22:08 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39     | 06:15 (1)<br>22:08 |
| 26                  | 08:23<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40     | 06:16 (1)<br>22:08 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42     | 06:17 (1)<br>22:08 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 06:07 (1)<br>21:44 | 06:18 (1)<br>22:08 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 | 05:35<br>20:48 | 06:05 (1)<br>21:45 | 06:19 (1)<br>22:07 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 06:03 (1)<br>21:47 | 06:20 (1)<br>22:07 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 | 20:50          | 06:17 (1)<br>21:48 | 06:21 (1)<br>22:07 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507                | 528                |
| Total, worst case   |                |                |                | 29             | 496                |                    |
| Sun reduction       |                |                |                | 0,48           | 0,53               |                    |
| Oper. time red.     |                |                |                | 0,94           | 0,94               |                    |
| Wind dir. red.      |                |                |                | 0,67           | 0,67               |                    |
| Total reduction     |                |                |                | 0,30           | 0,34               |                    |
| Total, real         |                |                |                | 9              | 166                |                    |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BT - Me ž a Mui ž a

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August    | September | October | November | December |
|---------------------|-------|-----------|-----------|---------|----------|----------|
| 1                   | 04:27 | 05:13     | 06:05 (1) | 06:14   | 07:14    | 07:19    |
|                     | 22:07 | 21:26     | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 04:28 | 05:15     | 06:05 (1) | 06:16   | 07:16    | 07:22    |
|                     | 22:06 | 21:24     | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 04:29 | 05:17     | 06:04 (1) | 06:18   | 07:18    | 07:24    |
|                     | 22:06 | 21:22     | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 04:30 | 05:18     | 06:04 (1) | 06:20   | 07:20    | 07:26    |
|                     | 22:05 | 21:20     | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 04:31 | 05:20     | 06:04 (1) | 06:22   | 07:22    | 07:28    |
|                     | 22:04 | 21:18     | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 04:32 | 05:22     | 06:04 (1) | 06:24   | 07:24    | 07:30    |
|                     | 22:04 | 21:15     | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 04:33 | 05:24     | 06:04 (1) | 06:26   | 07:26    | 07:32    |
|                     | 22:03 | 21:13     | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 04:34 | 05:26     | 06:04 (1) | 06:28   | 07:28    | 07:35    |
|                     | 22:02 | 21:11     | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 04:35 | 05:28     | 06:04 (1) | 06:30   | 07:31    | 07:37    |
|                     | 22:01 | 21:09     | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 04:37 | 05:30     | 06:05 (1) | 06:32   | 07:33    | 07:39    |
|                     | 22:00 | 21:07     | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 04:38 | 05:32     | 06:07 (1) | 06:34   | 07:35    | 07:41    |
|                     | 21:59 | 21:04     | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 04:39 | 05:34     | 06:09 (1) | 06:36   | 07:37    | 07:43    |
|                     | 21:58 | 21:02     | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 04:41 | 05:36     | 06:11 (1) | 06:38   | 07:39    | 07:45    |
|                     | 21:57 | 21:00     | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 04:42 | 05:38     | 06:12 (1) | 06:40   | 07:41    | 07:48    |
|                     | 21:56 | 20:57     | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 04:43 | 05:40     | 06:14 (1) | 06:42   | 07:43    | 07:50    |
|                     | 21:54 | 20:55     | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 04:45 | 05:42     | 06:14 (1) | 06:44   | 07:45    | 07:52    |
|                     | 21:53 | 20:53     | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 04:46 | 05:44     | 06:16     | 07:47   | 07:54    | 08:01    |
|                     | 21:52 | 20:50     | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 04:48 | 05:46     | 06:18     | 07:49   | 07:56    | 08:04    |
|                     | 21:50 | 20:48     | 19:27     | 18:08   | 16:00    | 15:35    |
| 19                  | 04:50 | 05:48     | 06:20     | 07:51   | 07:58    | 08:06    |
|                     | 21:49 | 20:45     | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 04:51 | 05:50     | 06:22     | 07:54   | 08:01    | 08:09    |
|                     | 21:47 | 20:43     | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 04:53 | 05:52     | 06:24     | 07:56   | 08:02    | 08:10    |
|                     | 21:46 | 20:40     | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 04:55 | 06:13 (1) | 06:26     | 07:58   | 08:04    | 08:12    |
|                     | 21:44 | 20:38     | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 04:56 | 06:12 (1) | 06:28     | 08:00   | 08:06    | 08:14    |
|                     | 21:43 | 20:35     | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 04:58 | 06:10 (1) | 06:30     | 08:02   | 08:08    | 08:16    |
|                     | 21:41 | 20:33     | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 05:00 | 06:09 (1) | 06:32     | 08:04   | 08:10    | 08:18    |
|                     | 21:39 | 20:30     | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 05:02 | 06:08 (1) | 06:34     | 08:06   | 08:12    | 08:20    |
|                     | 21:37 | 20:28     | 19:05     | 17:48   | 15:49    | 15:39    |
| 27                  | 05:03 | 06:07 (1) | 06:36     | 08:08   | 08:14    | 08:22    |
|                     | 21:36 | 20:25     | 19:03     | 17:46   | 15:47    | 15:40    |
| 28                  | 05:05 | 06:06 (1) | 06:38     | 08:10   | 08:16    | 08:24    |
|                     | 21:34 | 20:23     | 19:00     | 17:43   | 15:46    | 15:41    |
| 29                  | 05:07 | 06:06 (1) | 06:40     | 08:12   | 08:18    | 08:26    |
|                     | 21:32 | 20:20     | 18:57     | 17:41   | 15:45    | 15:42    |
| 30                  | 05:09 | 06:05 (1) | 06:42     | 08:14   | 08:20    | 08:28    |
|                     | 21:30 | 20:17     | 18:55     | 17:39   | 15:44    | 15:43    |
| 31                  | 05:11 | 06:05 (1) | 06:44     | 08:16   | 08:22    | 08:30    |
|                     | 21:28 | 20:15     | 18:53     | 17:36   | 15:43    | 15:44    |
| Potential sun hours | 529   | 470       | 385       | 324     | 248      | 216      |
| Total, worst case   | 191   | 336       |           |         |          |          |
| Sun reduction       | 0,51  | 0,51      |           |         |          |          |
| Oper. time red.     | 0,94  | 0,94      |           |         |          |          |
| Wind dir. red.      | 0,67  | 0,67      |           |         |          |          |
| Total reduction     | 0,32  | 0,32      |           |         |          |          |
| Total, real         | 61    | 109       |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: BU - Vilniši

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March | April | May                | June               |
|---------------------|---------|----------|-------|-------|--------------------|--------------------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31              | 06:01 (1) 04:34    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52              | 22 06:23 (1) 21:50 |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28              | 05:59 (1) 04:33    |
|                     | 15:46   | 16:44    | 17:47 | 19:52 | 20:54              | 24 06:23 (1) 21:51 |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26              | 05:59 (1) 04:31    |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:56              | 25 06:24 (1) 21:52 |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24              | 05:57 (1) 04:30    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58              | 27 06:24 (1) 21:54 |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22              | 05:57 (1) 04:29    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:01              | 27 06:24 (1) 21:55 |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19              | 05:56 (1) 04:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03              | 28 06:24 (1) 21:56 |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17              | 05:56 (1) 04:28    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05              | 28 06:24 (1) 21:57 |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15              | 05:56 (1) 04:27    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:07              | 28 06:24 (1) 21:58 |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13              | 05:56 (1) 04:26    |
|                     | 15:56   | 17:00    | 18:02 | 20:06 | 21:09              | 28 06:24 (1) 21:59 |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11              | 05:56 (1) 04:26    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11              | 27 06:23 (1) 22:00 |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09              | 05:57 (1) 04:25    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13              | 27 06:24 (1) 22:01 |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07              | 05:57 (1) 04:24    |
|                     | 16:01   | 17:07    | 18:08 | 20:13 | 21:15              | 27 06:24 (1) 22:02 |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05              | 05:57 (1) 04:24    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17              | 26 06:23 (1) 22:03 |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03              | 05:58 (1) 04:24    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19              | 24 06:22 (1) 22:04 |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01              | 05:58 (1) 04:23    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20              | 23 06:21 (1) 22:05 |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59              | 06:00 (1) 04:23    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22              | 21 06:21 (1) 22:05 |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57              | 06:00 (1) 04:23    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24              | 20 06:20 (1) 22:06 |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55              | 06:01 (1) 04:23    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26              | 17 06:18 (1) 22:06 |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53              | 06:03 (1) 04:23    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28              | 15 06:18 (1) 22:07 |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51              | 06:04 (1) 04:23    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30              | 12 06:16 (1) 22:07 |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50              | 06:07 (1) 04:23    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:32              | 7 06:14 (1) 22:07  |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48              | 04:23              |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:33              | 22:08              |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46              | 04:23              |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35              | 22:08              |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:45              | 04:23              |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37              | 22:08              |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43              | 04:24              |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39              | 22:08              |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42              | 04:24              |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40              | 22:08              |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 06:10 (1) 04:40    | 04:25              |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 6 06:16 (1) 21:42  | 22:08              |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 06:07 (1) 04:39    | 04:25              |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 11 06:18 (1) 21:44 | 22:08              |
| 29                  | 08:18   |          | 05:55 | 05:35 | 06:05 (1) 04:37    | 04:26              |
|                     | 16:35   |          | 18:44 | 20:48 | 15 06:20 (1) 21:45 | 22:07              |
| 30                  | 08:16   |          | 06:52 | 05:33 | 06:03 (1) 04:36    | 04:27              |
|                     | 16:38   |          | 19:46 | 20:50 | 19 06:22 (1) 21:47 | 22:07              |
| 31                  | 08:15   |          | 06:50 |       | 04:35              |                    |
|                     | 16:40   |          | 19:48 |       | 21:48              |                    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507                | 528                |
| Total, worst case   |         |          |       | 51    |                    | 483                |
| Sun reduction       |         |          |       | 0,48  |                    | 0,53               |
| Oper. time red.     |         |          |       | 0,94  |                    | 0,94               |
| Wind dir. red.      |         |          |       | 0,67  |                    | 0,67               |
| Total reduction     |         |          |       | 0,30  |                    | 0,33               |
| Total, real         |         |          |       | 15    |                    | 162                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BU - Vilniši

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August    | September | October | November | December |
|---------------------|-------|-----------|-----------|---------|----------|----------|
| 1                   | 04:27 | 05:13     | 06:08 (1) | 06:14   | 07:14    | 08:21    |
|                     | 22:07 | 21:26     | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 04:28 | 05:15     | 06:07 (1) | 06:16   | 07:16    | 08:23    |
|                     | 22:06 | 21:24     | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 04:29 | 05:17     | 06:06 (1) | 06:18   | 07:18    | 08:25    |
|                     | 22:06 | 21:22     | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 04:30 | 05:18     | 06:06 (1) | 06:20   | 07:20    | 08:26    |
|                     | 22:05 | 21:20     | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 04:31 | 05:20     | 06:06 (1) | 06:22   | 07:22    | 08:28    |
|                     | 22:04 | 21:18     | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 04:32 | 05:22     | 06:07 (1) | 06:24   | 07:24    | 08:29    |
|                     | 22:04 | 21:15     | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 04:33 | 05:24     | 06:07 (1) | 06:26   | 07:26    | 08:31    |
|                     | 22:03 | 21:13     | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 04:34 | 05:26     | 06:06 (1) | 06:28   | 07:28    | 08:32    |
|                     | 22:02 | 21:11     | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 04:35 | 05:28     | 06:06 (1) | 06:30   | 07:31    | 08:34    |
|                     | 22:01 | 21:09     | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 04:37 | 05:30     | 06:07 (1) | 06:32   | 07:33    | 08:35    |
|                     | 22:00 | 21:07     | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 04:38 | 05:32     | 06:07 (1) | 06:34   | 07:35    | 08:36    |
|                     | 21:59 | 21:04     | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 04:39 | 05:34     | 06:09 (1) | 06:36   | 07:37    | 08:37    |
|                     | 21:58 | 21:02     | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 04:41 | 05:36     | 06:11 (1) | 06:38   | 07:39    | 08:39    |
|                     | 21:57 | 21:00     | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 04:42 | 05:38     | 06:12 (1) | 06:40   | 07:41    | 08:40    |
|                     | 21:56 | 20:57     | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 04:43 | 05:40     | 06:14 (1) | 06:42   | 07:43    | 08:41    |
|                     | 21:54 | 20:55     | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 04:45 | 05:42     | 06:16 (1) | 06:44   | 07:45    | 08:42    |
|                     | 21:53 | 20:53     | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 04:46 | 05:44     | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 21:52 | 20:50     | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 04:48 | 05:46     | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 21:50 | 20:48     | 19:27     | 18:08   | 16:00    | 15:35    |
| 19                  | 04:50 | 05:48     | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 21:49 | 20:45     | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 04:51 | 05:50     | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 21:47 | 20:43     | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 04:53 | 05:52     | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 21:46 | 20:40     | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 04:55 | 05:54     | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 21:44 | 20:38     | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 04:56 | 06:17 (1) | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 21:43 | 20:35     | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 04:58 | 06:14 (1) | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 21:41 | 20:33     | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 05:00 | 06:13 (1) | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 21:39 | 20:30     | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 05:02 | 06:12 (1) | 07:04     | 08:06   | 08:12    | 08:48    |
|                     | 21:37 | 20:28     | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 05:03 | 06:10 (1) | 07:06     | 08:07   | 08:14    | 08:48    |
|                     | 21:36 | 20:25     | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 05:05 | 06:10 (1) | 07:08     | 08:09   | 08:16    | 08:48    |
|                     | 21:34 | 20:23     | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 05:07 | 06:09 (1) | 07:10     | 08:11   | 08:18    | 08:48    |
|                     | 21:32 | 20:20     | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 05:09 | 06:08 (1) | 07:12     | 08:13   | 08:19    | 08:48    |
|                     | 21:30 | 20:17     | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 05:11 | 06:08 (1) | 07:17     | 08:18   | 08:24    | 08:48    |
|                     | 21:28 | 20:15     | 18:52     | 16:36   | 15:42    | 15:44    |
| Potential sun hours | 529   | 470       | 385       | 324     | 248      | 216      |
| Total, worst case   | 165   | 374       |           |         |          |          |
| Sun reduction       | 0,51  | 0,51      |           |         |          |          |
| Oper. time red.     | 0,94  | 0,94      |           |         |          |          |
| Wind dir. red.      | 0,67  | 0,67      |           |         |          |          |
| Total reduction     | 0,32  | 0,32      |           |         |          |          |
| Total, real         | 53    | 121       |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: BV - Raceni

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March | April | May                | June               |
|---------------------|---------|----------|-------|-------|--------------------|--------------------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31              | 06:01 (1) 04:34    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52              | 22 06:23 (1) 21:50 |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28              | 06:00 (1) 04:33    |
|                     | 15:46   | 16:44    | 17:47 | 19:52 | 20:54              | 24 06:24 (1) 21:51 |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26              | 05:58 (1) 04:31    |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:56              | 26 06:24 (1) 21:52 |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24              | 05:57 (1) 04:30    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58              | 28 06:25 (1) 21:54 |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22              | 05:57 (1) 04:29    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:01              | 28 06:25 (1) 21:55 |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19              | 05:57 (1) 04:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03              | 28 06:25 (1) 21:56 |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17              | 05:56 (1) 04:28    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05              | 29 06:25 (1) 21:57 |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15              | 05:56 (1) 04:27    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:07              | 30 06:26 (1) 21:58 |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13              | 05:56 (1) 04:26    |
|                     | 15:56   | 17:00    | 18:02 | 20:06 | 21:09              | 29 06:25 (1) 21:59 |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11              | 05:56 (1) 04:26    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11              | 29 06:25 (1) 22:00 |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09              | 05:57 (1) 04:25    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13              | 29 06:26 (1) 22:01 |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07              | 05:57 (1) 04:24    |
|                     | 16:01   | 17:07    | 18:08 | 20:13 | 21:15              | 29 06:26 (1) 22:02 |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05              | 05:57 (1) 04:24    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17              | 28 06:25 (1) 22:03 |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03              | 05:57 (1) 04:24    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19              | 27 06:24 (1) 22:04 |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01              | 05:57 (1) 04:23    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20              | 27 06:24 (1) 22:05 |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59              | 05:58 (1) 04:23    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22              | 26 06:24 (1) 22:05 |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57              | 05:59 (1) 04:23    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24              | 24 06:23 (1) 22:06 |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55              | 05:59 (1) 04:23    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26              | 23 06:22 (1) 22:06 |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53              | 06:00 (1) 04:23    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28              | 22 06:22 (1) 22:07 |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51              | 06:01 (1) 04:23    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30              | 19 06:20 (1) 22:07 |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50              | 06:03 (1) 04:23    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:32              | 16 06:19 (1) 22:07 |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48              | 06:04 (1) 04:23    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:33              | 14 06:18 (1) 22:08 |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46              | 06:06 (1) 04:23    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35              | 10 06:16 (1) 22:08 |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:45              | 06:10 (1) 04:23    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37              | 3 06:13 (1) 22:08  |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43              | 04:24              |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39              | 22:08              |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42              | 04:24              |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40              | 22:08              |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 06:11 (1) 04:40    | 04:25              |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 3 06:14 (1) 21:42  | 22:08              |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 06:07 (1) 04:39    | 04:25              |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 11 06:18 (1) 21:44 | 22:08              |
| 29                  | 08:18   |          | 05:55 | 05:35 | 06:05 (1) 04:37    | 04:26              |
|                     | 16:35   |          | 18:44 | 20:48 | 15 06:20 (1) 21:45 | 22:07              |
| 30                  | 08:16   |          | 06:52 | 05:33 | 06:03 (1) 04:36    | 04:27              |
|                     | 16:38   |          | 19:46 | 20:50 | 19 06:22 (1) 21:47 | 22:07              |
| 31                  | 08:15   |          | 06:50 |       | 04:35              |                    |
|                     | 16:40   |          | 19:48 |       | 21:48              |                    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507                | 528                |
| Total, worst case   |         |          |       | 48    |                    | 570                |
| Sun reduction       |         |          |       | 0,48  |                    | 0,53               |
| Oper. time red.     |         |          |       | 0,94  |                    | 0,94               |
| Wind dir. red.      |         |          |       | 0,67  |                    | 0,67               |
| Total reduction     |         |          |       | 0,30  |                    | 0,33               |
| Total, real         |         |          |       | 15    |                    | 191                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BV - Raceni

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August    | September | October | November | December |
|---------------------|-------|-----------|-----------|---------|----------|----------|
| 1                   | 04:27 | 05:13     | 06:07 (1) | 06:14   | 07:14    | 07:19    |
|                     | 22:07 | 21:26     | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 04:28 | 05:15     | 06:07 (1) | 06:16   | 07:16    | 07:22    |
|                     | 22:06 | 21:24     | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 04:29 | 05:17     | 06:06 (1) | 06:18   | 07:18    | 07:24    |
|                     | 22:06 | 21:22     | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 04:30 | 05:18     | 06:06 (1) | 06:20   | 07:20    | 07:26    |
|                     | 22:05 | 21:20     | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 04:31 | 05:20     | 06:06 (1) | 06:22   | 07:22    | 07:28    |
|                     | 22:04 | 21:18     | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 04:32 | 05:22     | 06:07 (1) | 06:24   | 07:24    | 07:30    |
|                     | 22:04 | 21:15     | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 04:33 | 05:24     | 06:07 (1) | 06:26   | 07:26    | 07:32    |
|                     | 22:03 | 21:13     | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 04:34 | 05:26     | 06:06 (1) | 06:28   | 07:28    | 07:35    |
|                     | 22:02 | 21:11     | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 04:35 | 05:28     | 06:07 (1) | 06:30   | 07:31    | 07:37    |
|                     | 22:01 | 21:09     | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 04:37 | 05:30     | 06:07 (1) | 06:32   | 07:33    | 07:39    |
|                     | 22:00 | 21:07     | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 04:38 | 05:32     | 06:08 (1) | 06:34   | 07:35    | 07:41    |
|                     | 21:59 | 21:04     | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 04:39 | 05:34     | 06:09 (1) | 06:36   | 07:37    | 07:43    |
|                     | 21:58 | 21:02     | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 04:41 | 05:36     | 06:10 (1) | 06:38   | 07:39    | 07:45    |
|                     | 21:57 | 21:00     | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 04:42 | 05:38     | 06:12 (1) | 06:40   | 07:41    | 07:48    |
|                     | 21:56 | 20:57     | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 04:43 | 05:40     | 06:14 (1) | 06:42   | 07:43    | 07:50    |
|                     | 21:54 | 20:55     | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 04:45 | 05:42     | 06:16 (1) | 06:44   | 07:45    | 07:52    |
|                     | 21:53 | 20:53     | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 04:46 | 05:44     | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 21:52 | 20:50     | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 04:48 | 05:46     | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 21:50 | 20:48     | 19:27     | 18:08   | 16:00    | 15:35    |
| 19                  | 04:50 | 05:48     | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 21:49 | 20:45     | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 04:51 | 06:19 (1) | 05:50     | 06:52   | 07:54    | 08:00    |
|                     | 21:47 | 06:22 (1) | 20:43     | 19:21   | 18:03    | 15:57    |
| 21                  | 04:53 | 06:16 (1) | 05:52     | 06:54   | 07:56    | 08:02    |
|                     | 21:46 | 06:26 (1) | 20:40     | 19:19   | 18:00    | 15:56    |
| 22                  | 04:55 | 06:14 (1) | 05:54     | 06:56   | 07:58    | 08:04    |
|                     | 21:44 | 06:28 (1) | 20:38     | 19:16   | 17:58    | 15:54    |
| 23                  | 04:56 | 06:13 (1) | 05:56     | 06:58   | 08:00    | 08:06    |
|                     | 21:43 | 06:30 (1) | 20:35     | 19:13   | 17:55    | 15:53    |
| 24                  | 04:58 | 06:11 (1) | 05:58     | 07:00   | 08:02    | 08:08    |
|                     | 21:41 | 06:30 (1) | 20:33     | 19:11   | 17:53    | 15:51    |
| 25                  | 05:00 | 06:11 (1) | 06:00     | 07:02   | 08:04    | 08:10    |
|                     | 21:39 | 06:32 (1) | 20:30     | 19:08   | 17:50    | 15:50    |
| 26                  | 05:02 | 06:10 (1) | 06:02     | 07:04   | 07:06    | 08:12    |
|                     | 21:37 | 06:33 (1) | 20:28     | 19:05   | 16:48    | 15:49    |
| 27                  | 05:03 | 06:09 (1) | 06:04     | 07:06   | 07:09    | 08:14    |
|                     | 21:36 | 06:33 (1) | 20:25     | 19:03   | 16:46    | 15:47    |
| 28                  | 05:05 | 06:09 (1) | 06:06     | 07:08   | 07:11    | 08:16    |
|                     | 21:34 | 06:34 (1) | 20:23     | 19:00   | 16:43    | 15:46    |
| 29                  | 05:07 | 06:08 (1) | 06:08     | 07:10   | 07:13    | 08:18    |
|                     | 21:32 | 06:35 (1) | 20:20     | 18:57   | 16:41    | 15:45    |
| 30                  | 05:09 | 06:07 (1) | 06:10     | 07:12   | 07:15    | 08:19    |
|                     | 21:30 | 06:35 (1) | 20:17     | 18:55   | 16:39    | 15:44    |
| 31                  | 05:11 | 06:07 (1) | 06:12     |         | 07:17    | 08:48    |
|                     | 21:28 | 06:35 (1) | 20:15     |         | 16:36    | 15:44    |
| Potential sun hours | 529   | 470       | 385       | 324     | 248      | 216      |
| Total, worst case   | 239   | 394       |           |         |          |          |
| Sun reduction       | 0,51  | 0,51      |           |         |          |          |
| Oper. time red.     | 0,94  | 0,94      |           |         |          |          |
| Wind dir. red.      | 0,67  | 0,67      |           |         |          |          |
| Total reduction     | 0,32  | 0,32      |           |         |          |          |
| Total, real         | 76    | 127       |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BW - Vipes skola

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:33    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:58 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:01 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BX - Vipes skola

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:47 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:06 | 05:17<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:31<br>21:54 | 04:30<br>22:05 | 05:19<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:51 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>18:00 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:57 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:37<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:26 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:17 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:03<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:52<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:17 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
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| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:48<br>20:38 | 04:45<br>21:37 | 04:24<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
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| 29                  | 08:18<br>16:36 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:38<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BY - Vipes skola

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:25    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:59 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:01 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:54 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:33    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:29   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 18:00 | 20:04 | 21:07 | 21:59 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:57   | 17:00    | 18:02 | 20:07 | 21:09 | 22:00 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:01 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:01 | 21:59 | 21:04  | 19:46     | 18:26   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:38    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:48    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:19 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:21 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:17 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:37   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:30     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:25 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:52   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:32 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:34 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:43 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:22    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:17    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:40 | 20:44 | 21:42 | 22:08 | 21:36 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:12    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:08 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: BZ - Vipes skola 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:47 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:48<br>15:48 | 08:09<br>16:47 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:06 | 05:17<br>21:22 | 06:18<br>20:07 | 07:18<br>18:47 | 07:24<br>16:30 | 08:25<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:59 | 04:31<br>21:54 | 04:30<br>22:05 | 05:19<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:28 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:22<br>21:01 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:39 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:54<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:33<br>16:21 | 08:31<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>18:00 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:59 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:29<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:57 | 07:56<br>17:00 | 06:48<br>18:02 | 06:26<br>20:07 | 05:13<br>21:09 | 04:26<br>22:00 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:31<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 | 06:23<br>20:09 | 05:11<br>21:11 | 04:26<br>22:01 | 04:37<br>22:00 | 05:30<br>21:07 | 06:32<br>19:48 | 07:33<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:21<br>20:11 | 05:09<br>21:13 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:26 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:15 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:38<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:17 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:19 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:48<br>16:07 | 08:40<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:21 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:06 | 08:41<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:17 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:53 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                  | 08:37<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:30 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:03<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:08 | 07:56<br>16:00 | 08:44<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:52<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:33<br>16:17 | 07:31<br>17:25 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:54<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:32 | 04:50<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:56 | 08:46<br>15:36 |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:34 | 04:48<br>21:34 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:47<br>15:37 |
| 24                  | 08:27<br>16:25 | 07:22<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:45<br>21:37 | 04:24<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:17<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:40 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:36 | 06:04<br>20:25 | 07:06<br>19:03 | 07:09<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:12<br>17:42 | 05:58<br>18:42 | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:36 |                | 05:55<br>18:44 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:55 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 | 07:17<br>16:36 |                |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CA - Slipie 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:07 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:22    | 08:23    |
|                     | 15:46   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:10     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:48   | 08:09    | 07:04 | 06:42 | 05:26 | 04:31 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:18  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:03 | 21:56 | 22:04 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:05 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:59    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:35    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:07 | 21:58 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:31   | 07:37    | 08:34    |
|                     | 15:56   | 17:00    | 18:02 | 20:06 | 21:09 | 21:59 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:44   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:09 | 21:11 | 22:00 | 22:00 | 21:07  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:13 | 22:01 | 21:59 | 21:04  | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                     | 16:01   | 17:07    | 18:08 | 20:13 | 21:15 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:48    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:17 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:38     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:05 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:53  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:44    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:33   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:54   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:34 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:27   | 07:21    | 06:08 | 05:47 | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:09   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:42 | 20:46 | 21:44 | 22:07 | 21:34 | 20:23  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:18    | 08:48    |
|                     | 16:35   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:15   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

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Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CB - Upmali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          |    | April                  |    | May                    | June           | July           | August         | September      |                | October | November               | December       |                |                |
|---------------------|----------------|----------------|----------------|----|------------------------|----|------------------------|----------------|----------------|----------------|----------------|----------------|---------|------------------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 |    | 06:47<br>19:50         | 22 | 07:16 (2)<br>07:38 (2) | 05:31<br>20:52 | 04:34<br>21:50 | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 |         | 07:14<br>18:52         | 07:19<br>16:34 | 08:21<br>15:43 |                |
| 2                   | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:47 |    | 06:44<br>19:52         | 22 | 07:16 (2)<br>07:38 (2) | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:10 |         | 07:16<br>18:49         | 07:22<br>16:32 | 08:23<br>15:42 |                |
| 3                   | 08:48<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 |    | 06:42<br>19:54         | 21 | 07:16 (2)<br>07:37 (2) | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:06 | 05:17<br>21:22 | 06:18<br>20:07 |         | 07:18<br>18:46         | 07:24<br>16:30 | 08:24<br>15:41 |                |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 |    | 06:39<br>19:56         | 21 | 07:15 (2)<br>07:36 (2) | 05:24<br>20:58 | 04:30<br>21:54 | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 7       | 07:19 (2)<br>07:26 (2) | 07:20<br>18:44 | 08:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 |    | 06:36<br>19:58         | 20 | 07:16 (2)<br>07:36 (2) | 05:22<br>21:00 | 04:29<br>21:55 | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 13      | 07:16 (2)<br>07:29 (2) | 07:22<br>18:41 | 08:28<br>16:25 | 08:28<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 |    | 06:34<br>20:00         | 17 | 07:17 (2)<br>07:34 (2) | 05:19<br>21:03 | 04:29<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 16      | 07:14 (2)<br>07:30 (2) | 07:24<br>18:39 | 08:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 |    | 06:31<br>20:02         |    | 07:18 (2)<br>07:33 (2) | 05:17<br>21:05 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 19      | 07:12 (2)<br>07:31 (2) | 07:26<br>18:36 | 08:31<br>16:21 | 08:29<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:59<br>16:58 | 06:51<br>17:59 |    | 06:28<br>20:04         | 12 | 07:19 (2)<br>07:31 (2) | 05:15<br>21:07 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 20      | 07:11 (2)<br>07:31 (2) | 07:28<br>18:33 | 08:32<br>16:19 | 08:28<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:02 |    | 06:26<br>20:06         | 1  | 07:24 (2)<br>07:25 (2) | 05:13<br>21:09 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 22      | 07:09 (2)<br>07:31 (2) | 07:31<br>18:31 | 08:34<br>16:17 | 08:29<br>15:37 |
| 10                  | 08:44<br>15:58 | 07:54<br>17:02 | 06:46<br>18:04 |    | 06:23<br>20:09         |    |                        | 05:11<br>21:11 | 04:26<br>22:00 | 04:37<br>22:00 | 06:32<br>21:07 | 06:32<br>19:48 | 22      | 07:09 (2)<br>07:31 (2) | 07:33<br>18:28 | 08:35<br>16:15 | 08:30<br>15:36 |
| 11                  | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 |    | 06:20<br>20:11         |    |                        | 05:09<br>21:13 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 23      | 07:08 (2)<br>07:31 (2) | 07:35<br>18:25 | 08:36<br>16:13 | 08:29<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 |    | 06:18<br>20:13         |    |                        | 05:07<br>21:15 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 22      | 07:08 (2)<br>07:30 (2) | 07:37<br>18:23 | 08:37<br>16:11 | 08:29<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:48<br>17:09 | 06:38<br>18:10 |    | 06:15<br>20:15         |    |                        | 05:05<br>21:17 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 21      | 07:09 (2)<br>07:30 (2) | 07:39<br>18:20 | 08:39<br>16:09 | 08:30<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 |    | 06:13<br>20:17         |    |                        | 05:03<br>21:18 | 04:24<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 18      | 07:11 (2)<br>07:29 (2) | 07:41<br>18:18 | 08:40<br>16:07 | 08:37<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 |    | 06:10<br>20:19         |    |                        | 05:01<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 14      | 07:13 (2)<br>07:27 (2) | 07:43<br>18:15 | 08:41<br>16:06 | 08:38<br>15:35 |
| 16                  | 08:38<br>16:09 | 07:41<br>17:16 | 06:30<br>18:16 |    | 06:08<br>20:21         |    |                        | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 11      | 07:15 (2)<br>07:26 (2) | 07:45<br>18:13 | 08:42<br>16:04 | 08:37<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:19 |    | 06:05<br>20:23         |    |                        | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 7       | 07:17 (2)<br>07:24 (2) | 07:47<br>18:10 | 08:43<br>16:02 | 08:36<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 |    | 06:02<br>20:25         |    |                        | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 |         | 07:17<br>18:08         | 07:49<br>16:00 | 08:44<br>15:35 |                |
| 19                  | 08:34<br>16:15 | 07:34<br>17:22 | 06:22<br>18:23 |    | 06:00<br>20:27         |    |                        | 04:53<br>21:28 | 04:23<br>22:07 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 |         | 07:51<br>18:05         | 07:58<br>15:59 | 08:44<br>15:36 |                |
| 20                  | 08:33<br>16:16 | 07:31<br>17:25 | 06:19<br>18:25 |    | 05:57<br>20:29         |    |                        | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 |         | 07:54<br>18:03         | 08:00<br>15:57 | 08:45<br>15:36 |                |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 |    | 05:55<br>20:31         |    |                        | 04:50<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 |         | 07:56<br>18:00         | 08:02<br>15:56 | 08:46<br>15:36 |                |
| 22                  | 08:30<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 |    | 05:52<br>20:34         |    |                        | 04:48<br>21:33 | 04:23<br>22:08 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 |         | 07:58<br>17:58         | 08:04<br>15:54 | 08:46<br>15:37 |                |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 |    | 05:50<br>20:36         |    |                        | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 |         | 08:00<br>17:55         | 08:06<br>15:53 | 08:47<br>15:37 |                |
| 24                  | 08:27<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 |    | 05:47<br>20:38         |    |                        | 04:45<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 |         | 08:02<br>17:53         | 08:08<br>15:51 | 08:47<br>15:38 |                |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 |    | 05:45<br>20:40         |    |                        | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 |         | 08:04<br>17:50         | 08:10<br>15:50 | 08:48<br>15:38 |                |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 2  | 06:03 (2)<br>06:32 (2) |    |                        | 04:42<br>21:40 | 04:24<br>22:08 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 |         | 07:06<br>16:48         | 08:12<br>15:48 | 08:48<br>15:39 |                |
| 27                  | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 8  | 06:28 (2)<br>06:36 (2) |    |                        | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:03 |         | 07:09<br>16:46         | 08:14<br>15:47 | 08:48<br>15:40 |                |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 12 | 06:25 (2)<br>06:37 (2) |    |                        | 04:39<br>21:44 | 04:25<br>22:07 | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 |         | 07:11<br>16:43         | 08:16<br>15:46 | 08:48<br>15:41 |                |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:44 |    | 06:22 (2)<br>06:37 (2) |    |                        | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 |         | 07:13<br>16:41         | 08:18<br>15:45 | 08:48<br>15:42 |                |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 18 | 07:20 (2)<br>07:38 (2) |    |                        | 04:36<br>21:47 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 |         | 07:15<br>16:39         | 08:19<br>15:44 | 08:48<br>15:43 |                |
| 31                  | 08:15<br>16:40 |                | 06:50<br>19:48 | 21 | 07:17 (2)<br>07:38 (2) |    |                        | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 |                |         | 07:17<br>16:36         |                | 08:48<br>15:44 |                |
| Potential sun hours | 235            | 265            | 365            |    | 425                    |    |                        | 507            | 528            | 529            | 470            | 385            |         | 324                    | 248            | 216            |                |
| Total, worst case   |                |                |                |    |                        |    |                        |                |                |                |                | 235            |         |                        |                |                |                |
| Sun reduction       |                |                |                |    | 76                     |    |                        | 151            |                |                |                | 0,43           |         |                        |                |                |                |
| Oper. time red.     |                |                |                |    | 0,39                   |    |                        | 0,48           |                |                |                | 0,94           |         |                        |                |                |                |
| Wind dir. red.      |                |                |                |    | 0,94                   |    |                        | 0,66           |                |                |                | 0,66           |         |                        |                |                |                |
| Total reduction     |                |                |                |    | 0,24                   |    |                        | 0,30           |                |                |                | 0,27           |         |                        |                |                |                |
| Total, real         |                |                |                |    | 18                     |    |                        | 45             |                |                |                | 62             |         |                        |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CC - Ziemelnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     |       | January | February | March | April | May  |            | June  |    | July       |       | August | September  | October | November | December |       |       |
|---------------------|-------|---------|----------|-------|-------|------|------------|-------|----|------------|-------|--------|------------|---------|----------|----------|-------|-------|
| 1                   | 08:48 | 08:13   | 07:09    | 06:47 | 05:31 |      |            | 04:34 |    | 05:22 (22) | 04:27 |        | 05:30 (22) | 05:13   | 06:14    | 07:14    | 08:21 |       |
|                     | 15:45 | 16:42   | 17:44    | 19:50 | 20:52 |      |            | 21:49 | 23 | 05:45 (22) | 22:06 | 18     | 05:48 (22) | 21:26   | 20:12    | 18:52    | 16:34 | 15:43 |
| 2                   | 08:48 | 08:11   | 07:06    | 06:44 | 05:28 |      |            | 04:33 |    | 05:22 (22) | 04:28 |        | 05:30 (22) | 05:15   | 06:16    | 07:16    | 07:21 | 08:23 |
|                     | 15:47 | 16:44   | 17:46    | 19:52 | 20:54 |      |            | 21:51 | 23 | 05:45 (22) | 22:06 | 19     | 05:49 (22) | 21:24   | 20:09    | 18:49    | 16:32 | 15:42 |
| 3                   | 08:47 | 08:09   | 07:04    | 06:42 | 05:26 |      |            | 04:32 |    | 05:23 (22) | 04:29 |        | 05:30 (22) | 05:17   | 06:18    | 07:18    | 07:24 | 08:24 |
|                     | 15:48 | 16:47   | 17:49    | 19:54 | 20:56 |      |            | 21:52 | 23 | 05:46 (22) | 22:05 | 20     | 05:50 (22) | 21:22   | 20:07    | 18:46    | 16:30 | 15:41 |
| 4                   | 08:47 | 08:07   | 07:01    | 06:39 | 05:24 |      |            | 04:31 |    | 05:23 (22) | 04:30 |        | 05:31 (22) | 05:18   | 06:20    | 07:20    | 07:26 | 08:26 |
|                     | 15:49 | 16:49   | 17:51    | 19:56 | 20:58 |      |            | 21:53 | 22 | 05:45 (22) | 22:05 | 19     | 05:50 (22) | 21:20   | 20:04    | 18:44    | 16:28 | 15:40 |
| 5                   | 08:47 | 08:05   | 06:59    | 06:36 | 05:22 |      |            | 04:30 |    | 05:23 (22) | 04:31 |        | 05:31 (22) | 05:20   | 06:22    | 07:22    | 07:28 | 08:27 |
|                     | 15:51 | 16:51   | 17:53    | 19:58 | 21:00 |      |            | 21:55 | 22 | 05:45 (22) | 22:04 | 20     | 05:51 (22) | 21:17   | 20:02    | 18:41    | 16:25 | 15:39 |
| 6                   | 08:46 | 08:03   | 06:56    | 06:34 | 05:19 |      |            | 04:29 |    | 05:23 (22) | 04:32 |        | 05:31 (22) | 05:22   | 06:24    | 07:24    | 07:30 | 08:29 |
|                     | 15:52 | 16:53   | 17:55    | 20:00 | 21:02 |      |            | 21:56 | 22 | 05:45 (22) | 22:03 | 20     | 05:51 (22) | 21:15   | 19:59    | 18:39    | 16:23 | 15:39 |
| 7                   | 08:46 | 08:00   | 06:53    | 06:31 | 05:17 |      |            | 04:28 |    | 05:25 (22) | 04:33 |        | 05:30 (22) | 05:24   | 06:26    | 07:26    | 07:32 | 08:31 |
|                     | 15:53 | 16:55   | 17:57    | 20:02 | 21:04 |      |            | 21:57 | 20 | 05:45 (22) | 22:03 | 22     | 05:52 (22) | 21:13   | 19:56    | 18:36    | 16:21 | 15:38 |
| 8                   | 08:45 | 07:58   | 06:51    | 06:28 | 05:15 |      |            | 04:27 |    | 05:25 (22) | 04:34 |        | 05:30 (22) | 05:26   | 06:28    | 07:28    | 07:34 | 08:32 |
|                     | 15:55 | 16:58   | 17:59    | 20:04 | 21:06 |      |            | 21:58 | 20 | 05:45 (22) | 22:02 | 22     | 05:52 (22) | 21:11   | 19:54    | 18:33    | 16:19 | 15:37 |
| 9                   | 08:44 | 07:56   | 06:48    | 06:26 | 05:13 |      |            | 04:26 |    | 05:26 (22) | 04:35 |        | 05:30 (22) | 05:28   | 06:30    | 07:30    | 07:37 | 08:33 |
|                     | 15:57 | 17:00   | 18:02    | 20:06 | 21:08 |      |            | 21:59 | 19 | 05:45 (22) | 22:01 | 22     | 05:52 (22) | 21:09   | 19:51    | 18:31    | 16:17 | 15:37 |
| 10                  | 08:43 | 07:54   | 06:46    | 06:23 | 05:11 |      |            | 04:26 |    | 05:26 (22) | 04:37 |        | 05:30 (22) | 05:30   | 06:32    | 07:32    | 07:39 | 08:35 |
|                     | 15:58 | 17:02   | 18:04    | 20:08 | 21:10 |      |            | 22:00 | 19 | 05:45 (22) | 22:00 | 23     | 05:53 (22) | 21:06   | 19:48    | 18:28    | 16:15 | 15:37 |
| 11                  | 08:43 | 07:52   | 06:43    | 06:20 | 05:09 |      |            | 04:25 |    | 05:26 (22) | 04:38 |        | 05:30 (22) | 05:32   | 06:34    | 07:35    | 07:41 | 08:36 |
|                     | 16:00 | 17:04   | 18:06    | 20:11 | 21:12 |      |            | 22:01 | 19 | 05:45 (22) | 21:59 | 23     | 05:53 (22) | 21:04   | 19:46    | 18:25    | 16:13 | 15:36 |
| 12                  | 08:42 | 07:50   | 06:40    | 06:18 | 05:07 |      |            | 04:25 |    | 05:26 (22) | 04:39 |        | 05:30 (22) | 05:34   | 06:36    | 07:37    | 07:43 | 08:37 |
|                     | 16:02 | 17:07   | 18:08    | 20:13 | 21:14 |      |            | 22:02 | 18 | 05:44 (22) | 21:58 | 23     | 05:53 (22) | 21:02   | 19:43    | 18:23    | 16:11 | 15:36 |
| 13                  | 08:41 | 07:47   | 06:38    | 06:15 | 05:05 |      |            | 04:24 |    | 05:27 (22) | 04:41 |        | 05:30 (22) | 05:36   | 06:38    | 07:39    | 07:45 | 08:38 |
|                     | 16:03 | 17:09   | 18:10    | 20:15 | 21:16 |      |            | 22:03 | 17 | 05:44 (22) | 21:57 | 24     | 05:54 (22) | 20:59   | 19:40    | 18:20    | 16:09 | 15:36 |
| 14                  | 08:40 | 07:45   | 06:35    | 06:13 | 05:03 |      |            | 04:24 |    | 05:28 (22) | 04:42 |        | 05:30 (22) | 05:38   | 06:40    | 07:41    | 07:47 | 08:39 |
|                     | 16:05 | 17:11   | 18:12    | 20:17 | 21:18 |      |            | 22:04 | 17 | 05:45 (22) | 21:55 | 24     | 05:54 (22) | 20:57   | 19:38    | 18:18    | 16:07 | 15:35 |
| 15                  | 08:39 | 07:43   | 06:32    | 06:10 | 05:01 |      | 05:33 (22) | 04:23 |    | 05:28 (22) | 04:43 |        | 05:30 (22) | 05:40   | 06:42    | 07:43    | 07:49 | 08:41 |
|                     | 16:07 | 17:13   | 18:14    | 20:19 | 21:20 | 4    | 05:37 (22) | 22:04 | 17 | 05:45 (22) | 21:54 | 24     | 05:54 (22) | 20:55   | 19:35    | 18:15    | 16:06 | 15:35 |
| 16                  | 08:37 | 07:41   | 06:30    | 06:08 | 04:59 |      | 05:32 (22) | 04:23 |    | 05:28 (22) | 04:45 |        | 05:30 (22) | 05:42   | 06:44    | 07:45    | 07:52 | 08:42 |
|                     | 16:09 | 17:16   | 18:16    | 20:21 | 21:22 | 8    | 05:40 (22) | 22:05 | 16 | 05:44 (22) | 21:53 | 25     | 05:55 (22) | 20:52   | 19:32    | 18:13    | 16:04 | 15:35 |
| 17                  | 08:36 | 07:38   | 06:27    | 06:05 | 04:57 |      | 05:30 (22) | 04:23 |    | 05:28 (22) | 04:47 |        | 05:30 (22) | 05:44   | 06:46    | 07:47    | 07:54 | 08:42 |
|                     | 16:11 | 17:18   | 18:18    | 20:23 | 21:24 | 11   | 05:41 (22) | 22:05 | 16 | 05:44 (22) | 21:51 | 24     | 05:54 (22) | 20:50   | 19:29    | 18:10    | 16:02 | 15:35 |
| 18                  | 08:35 | 07:36   | 06:24    | 06:02 | 04:55 |      | 05:28 (22) | 04:23 |    | 05:29 (22) | 04:48 |        | 05:30 (22) | 05:46   | 06:48    | 07:49    | 07:56 | 08:43 |
|                     | 16:13 | 17:20   | 18:21    | 20:25 | 21:26 | 13   | 05:41 (22) | 22:06 | 15 | 05:44 (22) | 21:50 | 24     | 05:54 (22) | 20:48   | 19:27    | 18:08    | 16:00 | 15:36 |
| 19                  | 08:34 | 07:33   | 06:22    | 06:00 | 04:53 |      | 05:27 (22) | 04:23 |    | 05:29 (22) | 04:50 |        | 05:31 (22) | 05:48   | 06:50    | 07:51    | 07:58 | 08:44 |
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| 20                  | 08:32 | 07:31   | 06:19    | 05:57 | 04:51 |      | 05:25 (22) | 04:23 |    | 05:29 (22) | 04:51 |        | 05:30 (22) | 05:50   | 06:52    | 07:53    | 08:00 | 08:45 |
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| 21                  | 08:31 | 07:29   | 06:16    | 05:55 | 04:50 |      | 05:24 (22) | 04:23 |    | 05:30 (22) | 04:53 |        | 05:31 (22) | 05:52   | 06:54    | 07:56    | 08:02 | 08:45 |
|                     | 16:19 | 17:27   | 18:27    | 20:31 | 21:31 | 20   | 05:44 (22) | 22:07 | 15 | 05:45 (22) | 21:46 | 23     | 05:54 (22) | 20:40   | 19:19    | 18:00    | 15:56 | 15:36 |
| 22                  | 08:30 | 07:26   | 06:14    | 05:52 | 04:48 |      | 05:22 (22) | 04:23 |    | 05:30 (22) | 04:55 |        | 05:32 (22) | 05:54   | 06:56    | 07:58    | 08:04 | 08:46 |
|                     | 16:21 | 17:29   | 18:29    | 20:33 | 21:33 | 21   | 05:43 (22) | 22:07 | 15 | 05:45 (22) | 21:44 | 22     | 05:54 (22) | 20:38   | 19:16    | 17:58    | 15:54 | 15:37 |
| 23                  | 08:28 | 07:24   | 06:11    | 05:50 | 04:46 |      | 05:21 (22) | 04:23 |    | 05:30 (22) | 04:56 |        | 05:34 (22) | 05:56   | 06:58    | 08:00    | 08:06 | 08:47 |
|                     | 16:23 | 17:31   | 18:31    | 20:35 | 21:35 | 23   | 05:44 (22) | 22:07 | 15 | 05:45 (22) | 21:42 | 20     | 05:54 (22) | 20:35   | 19:13    | 17:55    | 15:53 | 15:37 |
| 24                  | 08:26 | 07:21   | 06:08    | 05:47 | 04:45 |      | 05:21 (22) | 04:24 |    | 05:30 (22) | 04:58 |        | 05:35 (22) | 05:58   | 07:00    | 08:02    | 08:08 | 08:47 |
|                     | 16:25 | 17:33   | 18:33    | 20:38 | 21:37 | 24   | 05:45 (22) | 22:08 | 15 | 05:45 (22) | 21:41 | 18     | 05:53 (22) | 20:33   | 19:11    | 17:53    | 15:51 | 15:38 |
| 25                  | 08:25 | 07:19   | 06:06    | 05:45 | 04:43 |      | 05:21 (22) | 04:24 |    | 05:31 (22) | 05:00 |        | 05:37 (22) | 06:00   | 07:02    | 08:04    | 08:10 | 08:47 |
|                     | 16:27 | 17:36   | 18:35    | 20:40 | 21:38 | 23   | 05:44 (22) | 22:08 | 15 | 05:46 (22) | 21:39 | 16     | 05:53 (22) | 20:30   | 19:08    | 17:50    | 15:50 | 15:39 |
| 26                  | 08:23 | 07:16   | 06:03    | 05:43 | 04:42 |      | 05:21 (22) | 04:24 |    | 05:30 (22) | 05:02 |        | 05:39 (22) | 06:02   | 07:04    | 08:06    | 08:12 | 08:48 |
|                     | 16:29 | 17:38   | 18:37    | 20:42 | 21:40 | 24   | 05:45 (22) | 22:08 | 16 | 05:46 (22) | 21:37 | 13     | 05:52 (22) | 20:45   | 19:05    | 17:48    | 15:49 | 15:37 |
| 27                  | 08:22 | 07:14   | 06:00    | 05:40 | 04:40 |      | 05:21 (22) | 04:25 |    | 05:31 (22) | 05:03 |        | 05:40 (22) | 06:04   | 07:06    | 08:08    | 08:14 | 08:48 |
|                     | 16:31 | 17:40   | 18:39    | 20:44 | 21:42 | 24   | 05:45 (22) | 22:07 | 16 | 05:47 (22) | 21:35 | 11     | 05:51 (22) | 20:25   | 19:02    | 17:46    | 15:47 | 15:40 |
| 28                  | 08:20 | 07:11   | 05:58    | 05:38 | 04:39 |      | 05:21 (22) | 04:25 |    | 05:30 (22) | 05:05 |        | 05:42 (22) | 06:06   | 07:08    | 08:11    | 08:16 | 08:48 |
|                     | 16:33 | 17:42   | 18:41    | 20:46 | 21:43 | 24   | 05:45 (22) | 22:07 | 17 | 05:47 (22) | 21:33 | 8      | 05:50 (22) | 20:22   | 19:00    | 17:43    | 15:46 | 15:41 |
| 29                  | 08:18 |         | 05:55    | 05:35 | 04:38 |      | 05:21 (22) | 04:26 |    | 05:31 (22) | 05:07 |        | 05:44 (22) | 06:08   | 07:10    | 08:13    | 08:17 | 08:48 |
|                     | 16:35 |         | 18:44    | 20:48 | 21:45 | 24   | 05:45 (22) | 22:07 | 17 | 05:48 (22) | 21:32 | 5      | 05:49 (22) | 20:20   | 18:57    | 16:41    | 15:45 | 15:42 |
| 30                  | 08:16 |         | 06:52    | 05:33 | 04:36 |      | 05:21 (22) | 04:27 |    | 05:31 (22) | 05:09 |        | 05:45 (22) | 06:10   | 07:12    | 08:15    | 08:19 | 08:48 |
|                     | 16:38 |         | 19:46    | 20:50 | 21:46 | 24   | 05:45 (22) | 22:07 | 17 | 05:48 (22) | 21:30 | 1      | 05:46 (22) | 20:17   | 18:54    | 16:39    | 15:44 | 15:43 |
| 31                  | 08:14 |         | 06:50    |       | 04:35 |      | 05:21 (22) |       |    |            | 05:11 |        | 06:12      |         | 07:17    | 08:20    | 08:24 | 08:48 |
|                     | 16:40 |         | 19:48    |       | 21:48 | 24   | 05:45 (22) |       |    |            | 21:28 |        | 20:15      |         | 16:36    | 15:44    | 15:44 |       |
| Potential sun hours |       | 235     | 266      | 365   | 425   | 507  |            | 528   |    | 529        |       | 470    | 385        | 324     | 248      | 217      |       |       |
| Total, worst case   |       |         |          |       |       | 324  |            | 536   |    | 580        |       |        |            |         |          |          |       |       |
| Sun reduction       |       |         |          |       |       | 0.53 |            | 0.54  |    | 0.54       |       |        |            |         |          |          |       |       |
| Oper. time red.     |       |         |          |       |       | 0.94 |            | 0.94  |    | 0.94       |       |        |            |         |          |          |       |       |
| Wind dir. red.      |       |         |          |       |       | 0.68 |            | 0.68  |    | 0.68       |       |        |            |         |          |          |       |       |
| Total reduction     |       |         |          |       |       | 0.34 |            | 0.34  |    | 0.32       |       |        |            |         |          |          |       |       |
| Total, real         |       |         |          |       |       | 110  |            | 184   |    | 187        |       |        |            |         |          |          |       |       |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CD - Ezermuiža

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:05 | 21:22  | 20:07     | 18:46   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:33    |
|                     | 15:57   | 17:00    | 18:02 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:12 | 22:01 | 21:59 | 21:04  | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:47    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:55 | 20:57  | 19:38     | 18:18   | 16:07    | 15:36    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:44 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:37   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:41    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:47 | 05:44  | 06:46     | 07:47   | 07:54    | 08:42    |
|                     | 16:11   | 17:18    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:33    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:06 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:45    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:38 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:46 | 22:07 | 21:30 | 20:17  | 18:54     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CE - Ezerjali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:13    | 07:09 | 06:47 | 05:31 | 04:34 | 04:28 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:05 | 21:22  | 20:07     | 18:47   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:05 | 21:20  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:21  | 06:22     | 07:22   | 07:28    | 08:28    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                     | 15:54   | 16:56    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:38    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:36 | 05:28  | 06:30     | 07:30   | 07:37    | 08:33    |
|                     | 15:57   | 17:00    | 18:02 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:12 | 22:01 | 21:59 | 21:04  | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:47    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:55 | 20:57  | 19:38     | 18:18   | 16:08    | 15:36    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:24 | 04:44 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:38   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:47 | 05:44  | 06:46     | 07:47   | 07:54    | 08:42    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:36    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:34    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:06 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:52 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:45    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:37    |
| 22                  | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:38 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:04 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 04:39 | 04:26 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:46 | 22:07 | 21:30 | 20:17  | 18:55     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CF - Ozolmuiža

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:31 | 04:34 | 04:28 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:47   | 16:44    | 17:47 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:24    | 08:24    |
|                     | 15:48   | 16:47    | 17:49 | 19:54 | 20:56 | 21:52 | 22:05 | 21:22  | 20:07     | 18:46   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:19  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:44   | 16:28    | 15:40    |
| 5                   | 08:47   | 08:05    | 06:59 | 06:36 | 05:22 | 04:30 | 04:31 | 05:21  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:03    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:39   | 16:23    | 15:39    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:54   | 16:56    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:38    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:36 | 05:28  | 06:30     | 07:30   | 07:37    | 08:33    |
|                     | 15:57   | 17:00    | 18:02 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:46 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:33   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:21 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:11 | 21:12 | 22:01 | 21:59 | 21:04  | 19:46     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                     | 16:02   | 17:07    | 18:08 | 20:13 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:47    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:55 | 20:57  | 19:38     | 18:18   | 16:08    | 15:36    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:01 | 04:24 | 04:44 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:37   | 07:41    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:41    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:47 | 05:44  | 06:46     | 07:47   | 07:54    | 08:42    |
|                     | 16:11   | 17:18    | 18:19 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:36    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:03 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:08   | 16:01    | 15:36    |
| 19                  | 08:34   | 07:33    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:06 | 21:49 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:52 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:17   | 17:25    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:45    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:56    | 15:37    |
| 22                  | 08:29   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:23   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:48 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:11     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:38 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:04 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:03     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 04:39 | 04:26 | 05:05 | 06:06  | 07:08     | 07:11   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:36   |          | 18:44 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:46 | 22:07 | 21:30 | 20:17  | 18:54     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CG - Vasarnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:52 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:25<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:42<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:07 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:19 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:04 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:23<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:50 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:42<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:02<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:23<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:38 |
| 27                  | 08:21<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:12<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CH - Ata ša

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:09<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>20:00 | 05:23<br>21:02 | 04:30<br>21:56 | 04:29<br>22:03 | 05:18<br>21:15 | 06:20<br>19:59 | 07:20<br>18:38 | 07:26<br>16:23 | 08:26<br>15:38 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
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| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
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| 27                  | 08:21<br>16:31 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CI - Mui ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

| January             |       |    | February   |            |            | March |            |            | April     |           |            | May        |            |            | June       |       |  |
|---------------------|-------|----|------------|------------|------------|-------|------------|------------|-----------|-----------|------------|------------|------------|------------|------------|-------|--|
| 1                   | 08:48 |    | 08:12      | 15:49 (12) | 07:09      |       | 16:43 (13) | 06:47      |           | 18:34 (9) | 05:30      |            | 18:44 (11) | 04:33      |            |       |  |
|                     | 15:45 |    | 16:42      | 20         | 16:09 (12) | 17:44 |            | 17:06 (13) | 19:49     | 20        | 18:54 (9)  | 20:52      | 71         | 20:19 (10) | 21:49      |       |  |
| 2                   | 08:48 |    | 08:10      |            | 15:48 (12) | 07:06 |            | 16:44 (13) | 06:44     |           | 18:35 (9)  | 05:28      |            | 18:44 (11) | 04:32      |       |  |
|                     | 15:46 |    | 16:44      | 23         | 16:11 (12) | 17:46 |            | 17:06 (13) | 19:52     | 16        | 18:51 (9)  | 20:54      | 73         | 20:20 (10) | 21:51      |       |  |
| 3                   | 08:47 |    | 08:09      |            | 15:46 (12) | 07:03 |            | 16:44 (13) | 06:41     |           | 18:39 (9)  | 05:26      |            | 18:45 (11) | 04:31      |       |  |
|                     | 15:47 |    | 16:46      | 25         | 16:11 (12) | 17:48 |            | 17:05 (13) | 19:54     | 10        | 18:49 (9)  | 20:56      | 73         | 20:21 (10) | 21:52      |       |  |
| 4                   | 08:47 |    | 08:07      |            | 15:46 (12) | 07:01 |            | 16:44 (13) | 06:39     |           |            | 05:23      |            | 18:46 (11) | 04:30      |       |  |
|                     | 15:48 |    | 16:48      | 26         | 16:12 (12) | 17:50 |            | 17:03 (13) | 19:56     |           |            | 20:58      | 72         | 20:21 (10) | 21:53      |       |  |
| 5                   | 08:47 |    | 08:05      |            | 15:46 (12) | 06:58 |            | 16:46 (13) | 06:36     |           |            | 05:21      |            | 18:47 (11) | 04:29      |       |  |
|                     | 15:50 |    | 16:50      | 27         | 16:13 (12) | 17:53 |            | 17:02 (13) | 19:58     | 16        |            | 21:00      | 73         | 20:22 (10) | 21:55      |       |  |
| 6                   | 08:46 |    | 08:02      |            | 15:46 (12) | 06:56 |            | 16:48 (13) | 06:33     |           |            | 05:19      |            | 18:47 (11) | 04:28      |       |  |
|                     | 15:51 |    | 16:53      | 28         | 16:14 (12) | 17:55 |            | 17:00 (13) | 20:00     | 12        |            | 21:02      | 72         | 20:22 (10) | 21:56      |       |  |
| 7                   | 08:46 |    | 08:00      |            | 15:45 (12) | 06:53 |            |            | 06:31     |           | 19:08 (11) | 05:17      |            | 18:48 (11) | 04:27      |       |  |
|                     | 15:53 |    | 16:55      | 29         | 16:14 (12) | 17:57 |            |            | 20:02     | 8         |            | 21:04      | 72         | 20:23 (10) | 21:57      |       |  |
| 8                   | 08:45 |    | 07:58      |            | 15:45 (12) | 06:51 |            |            | 06:28     |           | 19:03 (11) | 05:14      |            | 18:50 (11) | 04:26      |       |  |
|                     | 15:54 |    | 16:57      | 29         | 16:14 (12) | 17:59 |            |            | 20:04     | 19        |            | 21:06      | 69         | 20:23 (10) | 21:58      |       |  |
| 9                   | 08:44 |    | 07:56      |            | 15:45 (12) | 06:48 |            |            | 06:25     |           | 18:59 (11) | 05:12      |            | 18:51 (11) | 04:26      |       |  |
|                     | 15:56 |    | 16:59      | 30         | 16:15 (12) | 18:01 |            |            | 20:06     | 25        |            | 21:08      | 66         | 20:23 (10) | 21:59      |       |  |
| 10                  | 08:43 |    | 07:54      |            | 15:45 (12) | 06:45 |            |            | 06:23     |           | 18:57 (11) | 05:10      |            | 18:52 (11) | 04:25      |       |  |
|                     | 15:58 |    | 17:02      | 29         | 16:14 (12) | 18:03 |            |            | 20:08     | 30        |            | 21:10      | 65         | 20:23 (10) | 22:00      |       |  |
| 11                  | 08:43 |    | 07:52      |            | 15:45 (12) | 06:43 |            |            | 06:20     |           | 18:55 (11) | 05:08      |            | 18:53 (11) | 04:24      |       |  |
|                     | 15:59 |    | 17:04      | 30         | 16:15 (12) | 18:05 |            |            | 20:10     | 33        |            | 21:12      | 62         | 20:23 (10) | 22:01      |       |  |
| 12                  | 08:42 |    | 07:50      |            | 15:46 (12) | 06:40 |            |            | 06:17     |           | 18:52 (11) | 05:06      |            | 18:55 (11) | 04:24      |       |  |
|                     | 16:01 |    | 17:06      | 29         | 16:15 (12) | 18:08 |            |            | 20:12     | 37        |            | 21:14      | 58         | 20:23 (10) | 22:02      |       |  |
| 13                  | 08:41 |    | 07:47      |            | 15:46 (12) | 06:37 |            |            | 06:15     |           | 18:51 (11) | 05:04      |            | 18:57 (11) | 04:23      |       |  |
|                     | 16:03 |    | 17:08      | 28         | 16:14 (12) | 18:10 |            |            | 20:14     | 39        |            | 21:16      | 53         | 20:22 (10) | 22:03      |       |  |
| 14                  | 08:40 |    | 07:45      |            | 15:47 (12) | 06:35 |            |            | 06:12     |           | 18:49 (11) | 05:02      |            | 19:01 (11) | 04:23      |       |  |
|                     | 16:04 |    | 17:11      | 27         | 16:14 (12) | 18:12 |            |            | 20:17     | 42        |            | 21:18      | 47         | 20:23 (10) | 22:04      |       |  |
| 15                  | 08:39 |    | 07:43      |            | 15:47 (12) | 06:32 |            |            | 06:10     |           | 18:49 (11) | 05:00      |            | 19:49 (10) | 04:23      |       |  |
|                     | 16:06 |    | 17:13      | 25         | 16:12 (12) | 18:14 |            |            | 20:19     | 43        |            | 21:20      | 33         | 20:22 (10) | 22:04      |       |  |
| 16                  | 08:37 |    | 07:40      |            | 15:48 (12) | 06:29 |            |            | 06:07     |           | 18:47 (11) | 04:58      |            | 19:49 (10) | 04:22      |       |  |
|                     | 16:08 |    | 17:15      | 24         | 16:12 (12) | 18:16 |            |            | 20:21     | 45        |            | 21:22      | 33         | 20:22 (10) | 22:05      |       |  |
| 17                  | 08:36 |    | 07:38      |            | 15:49 (12) | 06:27 |            | 17:44 (9)  | 06:05     |           | 18:47 (11) | 04:56      |            | 19:50 (10) | 04:22      |       |  |
|                     | 16:10 |    | 17:17      | 21         | 16:10 (12) | 18:18 | 8          |            | 17:52 (9) | 46        |            | 21:24      | 32         | 20:22 (10) | 22:06      |       |  |
| 18                  | 08:35 |    | 07:36      |            | 15:51 (12) | 06:24 |            |            | 17:41 (9) | 06:02     |            | 21:24      |            | 19:50 (10) | 04:22      |       |  |
|                     | 16:12 |    | 17:20      | 18         | 16:09 (12) | 18:20 | 14         |            | 17:55 (9) | 20:25     | 48         | 19:33 (11) | 21:26      | 31         | 20:21 (10) | 22:06 |  |
| 19                  | 08:34 |    | 07:33      |            | 15:53 (12) | 06:21 |            |            | 17:38 (9) | 05:59     |            | 21:26      |            | 19:50 (10) | 04:22      |       |  |
|                     | 16:14 |    | 17:22      | 13         | 16:06 (12) | 18:22 | 19         |            | 17:57 (9) | 20:27     | 48         | 19:33 (11) | 21:28      | 31         | 20:21 (10) | 22:07 |  |
| 20                  | 08:32 |    | 07:31      |            | 15:59 (12) | 06:19 |            |            | 17:36 (9) | 05:57     |            | 21:28      |            | 19:51 (10) | 04:22      |       |  |
|                     | 16:16 |    | 17:24      | 7          | 16:56 (13) | 18:24 | 22         |            | 17:58 (9) | 20:29     | 49         | 19:34 (11) | 21:30      | 30         | 20:21 (10) | 22:07 |  |
| 21                  | 08:31 |    | 07:28      |            | 16:48 (13) | 06:16 |            |            | 17:36 (9) | 05:54     |            | 21:30      |            | 19:51 (10) | 04:22      |       |  |
|                     | 16:18 |    | 17:26      | 10         | 16:58 (13) | 18:27 | 24         |            | 18:00 (9) | 20:31     | 49         | 19:33 (11) | 21:31      | 29         | 20:20 (10) | 22:07 |  |
| 22                  | 08:29 |    | 07:26      |            | 16:47 (13) | 06:13 |            |            | 17:34 (9) | 05:52     |            | 21:31      |            | 19:53 (10) | 04:22      |       |  |
|                     | 16:20 |    | 17:29      | 14         | 17:01 (13) | 18:29 | 26         |            | 18:00 (9) | 20:33     | 50         | 19:34 (11) | 21:33      | 27         | 20:20 (10) | 22:07 |  |
| 23                  | 08:28 |    | 07:24      |            | 16:45 (13) | 06:11 |            |            | 17:33 (9) | 05:49     |            | 21:33      |            | 19:53 (10) | 04:23      |       |  |
|                     | 16:22 |    | 17:31      | 18         | 17:03 (13) | 18:31 | 27         |            | 18:00 (9) | 20:35     | 50         | 19:33 (11) | 21:35      | 25         | 20:18 (10) | 22:08 |  |
| 24                  | 08:26 |    | 07:21      |            | 16:44 (13) | 06:08 |            |            | 17:32 (9) | 05:47     |            | 21:35      |            | 19:54 (10) | 04:23      |       |  |
|                     | 16:24 |    | 17:33      | 21         | 17:05 (13) | 18:33 | 28         |            | 18:00 (9) | 20:37     | 50         | 19:33 (11) | 21:37      | 24         | 20:18 (10) | 22:08 |  |
| 25                  | 08:25 |    | 07:19      |            | 16:44 (13) | 06:05 |            |            | 17:32 (9) | 05:45     |            | 21:37      |            | 19:55 (10) | 04:23      |       |  |
|                     | 16:26 |    | 17:35      | 23         | 17:07 (13) | 18:35 | 29         |            | 18:01 (9) | 20:40     | 50         | 19:33 (11) | 21:38      | 23         | 20:18 (10) | 22:08 |  |
| 26                  | 08:23 |    | 07:16      |            | 16:43 (13) | 06:03 |            |            | 17:32 (9) | 05:42     |            | 21:38      |            | 19:56 (10) | 04:24      |       |  |
|                     | 16:28 |    | 17:37      | 24         | 17:07 (13) | 18:37 | 28         |            | 18:00 (9) | 20:42     | 50         | 19:32 (11) | 21:40      | 20         | 20:16 (10) | 22:08 |  |
| 27                  | 08:21 |    | 07:14      |            | 16:43 (13) | 06:00 |            |            | 17:31 (9) | 05:40     |            | 21:40      |            | 19:57 (10) | 04:24      |       |  |
|                     | 16:31 |    | 17:40      | 24         | 17:07 (13) | 18:39 | 28         |            | 17:59 (9) | 20:44     | 55         | 20:10 (10) | 21:42      | 18         | 20:15 (10) | 22:08 |  |
| 28                  | 08:20 |    | 07:11      |            | 16:43 (13) | 05:57 |            |            | 17:32 (9) | 05:37     |            | 21:42      |            | 19:59 (10) | 04:25      |       |  |
|                     | 16:33 |    | 17:42      | 24         | 17:07 (13) | 18:41 | 27         |            | 17:59 (9) | 20:46     | 63         | 20:14 (10) | 21:43      | 15         | 20:14 (10) | 22:07 |  |
| 29                  | 08:18 |    |            |            |            | 05:55 |            |            | 17:32 (9) | 05:35     |            | 21:43      |            | 20:01 (10) | 04:25      |       |  |
|                     | 16:35 | 8  | 16:02 (12) |            |            | 18:43 | 26         |            | 17:58 (9) | 20:48     | 66         | 20:16 (10) | 21:45      | 12         | 20:13 (10) | 22:07 |  |
| 30                  | 08:16 |    | 15:51 (12) |            |            | 06:52 |            |            | 18:32 (9) | 05:33     |            | 21:45      |            | 20:03 (10) | 04:26      |       |  |
|                     | 16:37 | 13 | 16:04 (12) |            |            | 19:45 | 25         |            | 18:57 (9) | 20:50     | 70         | 20:17 (10) | 21:46      | 8          | 20:11 (10) | 22:07 |  |
| 31                  | 08:14 |    | 15:50 (12) |            |            | 06:49 |            |            | 18:33 (9) |           |            | 21:46      |            |            |            |       |  |
|                     | 16:39 | 17 | 16:07 (12) |            |            | 19:47 | 23         |            | 18:56 (9) |           |            | 21:48      |            |            |            |       |  |
| Potential sun hours | 235   |    | 265        |            |            | 365   |            |            | 425       |           |            | 507        |            |            | 529        |       |  |
| Total, worst case   | 38    |    | 646        |            |            | 467   |            |            | 1111      |           |            | 1317       |            |            |            |       |  |
| Sun reduction       | 0,15  |    | 0,24       |            |            | 0,39  |            |            | 0,48      |           |            | 0,53       |            |            |            |       |  |
| Oper. time red.     | 0,94  |    | 0,94       |            |            | 0,94  |            |            | 0,94      |           |            | 0,94       |            |            |            |       |  |
| Wind dir. red.      | 0,67  |    | 0,67       |            |            | 0,67  |            |            | 0,64      |           |            | 0,63       |            |            |            |       |  |
| Total reduction     | 0,10  |    | 0,15       |            |            | 0,24  |            |            | 0,29      |           |            | 0,31       |            |            |            |       |  |
| Total, real         | 4     |    | 99         |            |            | 113   |            |            | 323       |           |            | 414        |            |            |            |       |  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CI - Mui ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

| July                |       | August |            | September |            | October |  | November |            | December |  |
|---------------------|-------|--------|------------|-----------|------------|---------|--|----------|------------|----------|--|
| 1                   | 04:27 | 05:12  | 19:06 (11) | 06:14     | 18:53 (11) | 07:14   |  | 07:19    | 15:15 (12) | 08:21    |  |
| 2                   | 04:28 | 05:14  | 19:04 (11) | 06:16     | 18:54 (11) | 07:16   |  | 07:21    | 15:14 (12) | 08:23    |  |
| 3                   | 04:28 | 05:16  | 19:03 (11) | 06:18     | 18:56 (11) | 07:18   |  | 07:23    | 15:15 (12) | 08:24    |  |
| 4                   | 04:29 | 05:18  | 19:01 (11) | 06:20     | 18:58 (11) | 07:20   |  | 07:26    | 15:15 (12) | 08:26    |  |
| 5                   | 04:30 | 05:20  | 18:59 (11) | 06:22     | 19:01 (11) | 07:22   |  | 07:28    | 15:15 (12) | 08:27    |  |
| 6                   | 04:31 | 05:22  | 18:58 (11) | 06:24     | 19:16 (11) | 07:24   |  | 07:30    | 15:16 (12) | 08:29    |  |
| 7                   | 04:32 | 05:24  | 18:57 (11) | 06:26     |            | 07:26   |  | 07:32    | 15:16 (12) | 08:31    |  |
| 8                   | 04:34 | 05:26  | 18:56 (11) | 06:28     |            | 07:28   |  | 07:34    | 15:17 (12) | 08:32    |  |
| 9                   | 04:35 | 05:28  | 18:55 (11) | 06:30     | 18:37 (9)  | 07:30   |  | 07:37    | 15:18 (12) | 08:33    |  |
| 10                  | 04:36 | 05:30  | 18:54 (11) | 06:32     | 18:38 (9)  | 07:32   |  | 07:39    | 15:19 (12) | 08:35    |  |
| 11                  | 04:37 | 05:32  | 18:53 (11) | 06:34     | 18:43 (9)  | 07:34   |  | 07:41    | 15:20 (12) | 08:36    |  |
| 12                  | 04:39 | 05:34  | 18:52 (11) | 06:36     | 18:45 (9)  | 07:36   |  | 07:43    | 15:21 (12) | 08:37    |  |
| 13                  | 04:40 | 05:36  | 18:52 (11) | 06:38     | 18:47 (9)  | 07:38   |  | 07:45    | 15:22 (12) | 08:38    |  |
| 14                  | 04:41 | 05:38  | 18:51 (11) | 06:40     | 18:48 (9)  | 07:40   |  | 07:47    | 15:23 (12) | 08:40    |  |
| 15                  | 04:43 | 05:40  | 18:51 (11) | 06:42     | 18:49 (9)  | 07:43   |  | 07:49    | 15:24 (12) | 08:41    |  |
| 16                  | 04:44 | 05:42  | 18:51 (11) | 06:44     | 18:49 (9)  | 07:45   |  | 07:52    | 15:25 (12) | 08:42    |  |
| 17                  | 04:46 | 05:44  | 18:49 (11) | 06:46     | 18:49 (9)  | 07:47   |  | 07:54    | 15:26 (12) | 08:43    |  |
| 18                  | 04:47 | 05:46  | 18:49 (11) | 06:48     | 18:49 (9)  | 07:49   |  | 07:56    | 15:27 (12) | 08:44    |  |
| 19                  | 04:49 | 05:48  | 18:49 (11) | 06:50     | 18:48 (9)  | 07:51   |  | 07:58    | 15:28 (12) | 08:45    |  |
| 20                  | 04:51 | 05:50  | 18:49 (11) | 06:52     | 18:48 (9)  | 07:53   |  | 08:00    | 15:29 (12) | 08:46    |  |
| 21                  | 04:52 | 05:52  | 18:49 (11) | 06:54     | 18:48 (9)  | 07:55   |  | 08:02    | 15:30 (12) | 08:47    |  |
| 22                  | 04:54 | 05:54  | 18:49 (11) | 06:56     | 18:47 (9)  | 07:57   |  | 08:04    | 15:31 (12) | 08:48    |  |
| 23                  | 04:56 | 05:56  | 18:49 (11) | 06:58     | 18:45 (9)  | 07:59   |  | 08:06    | 15:32 (12) | 08:49    |  |
| 24                  | 04:57 | 05:58  | 18:49 (11) | 07:00     | 18:44 (9)  | 08:02   |  | 08:08    | 15:33 (12) | 08:50    |  |
| 25                  | 04:59 | 06:00  | 18:49 (11) | 07:02     | 18:42 (9)  | 08:04   |  | 08:10    | 15:34 (12) | 08:51    |  |
| 26                  | 05:01 | 06:02  | 18:48 (11) | 07:04     | 18:39 (9)  | 08:06   |  | 08:12    | 15:35 (12) | 08:52    |  |
| 27                  | 05:03 | 06:04  | 18:49 (11) | 07:06     | 18:36 (9)  | 08:08   |  | 08:14    | 15:36 (12) | 08:53    |  |
| 28                  | 05:05 | 06:06  | 18:49 (11) | 07:08     | 18:34 (9)  | 08:10   |  | 08:16    | 15:37 (12) | 08:54    |  |
| 29                  | 05:07 | 06:08  | 18:50 (11) | 07:10     |            | 08:12   |  | 08:18    | 15:38 (12) | 08:55    |  |
| 30                  | 05:08 | 06:10  | 18:51 (11) | 07:12     |            | 08:14   |  | 08:20    | 15:39 (12) | 08:56    |  |
| 31                  | 05:10 | 06:12  | 18:52 (11) | 07:14     |            | 08:16   |  | 08:22    | 15:40 (12) | 08:57    |  |
| Potential sun hours | 530   | 470    | 385        | 324       | 248        | 216     |  |          |            |          |  |
| Total, worst case   | 488   | 1780   | 539        | 488       | 318        |         |  |          |            |          |  |
| Sun reduction       | 0,51  | 0,51   | 0,43       | 0,27      | 0,09       |         |  |          |            |          |  |
| Oper. time red.     | 0,94  | 0,94   | 0,94       | 0,94      | 0,94       |         |  |          |            |          |  |
| Wind dir. red.      | 0,62  | 0,64   | 0,66       | 0,67      | 0,67       |         |  |          |            |          |  |
| Total reduction     | 0,30  | 0,31   | 0,27       | 0,17      | 0,06       |         |  |          |            |          |  |
| Total, real         | 145   | 548    | 143        | 83        | 19         |         |  |          |            |          |  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CJ - Rijasvecumi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |      |            | February |      |            | March |      |            | April | May   | June  |
|---------------------|---------|------|------------|----------|------|------------|-------|------|------------|-------|-------|-------|
| 1                   | 08:48   |      | 14:08 (11) | 08:12    |      | 14:24 (11) | 07:09 |      | 15:59 (10) | 06:47 | 05:30 | 04:33 |
|                     | 15:45   | 34   | 14:42 (11) | 16:42    | 47   | 15:47 (9)  | 17:44 | 29   | 16:28 (10) | 19:50 | 20:52 | 21:49 |
| 2                   | 08:48   |      | 14:09 (11) | 08:11    |      | 14:26 (11) | 07:06 |      | 16:01 (10) | 06:44 | 05:28 | 04:32 |
|                     | 15:46   | 34   | 14:43 (11) | 16:44    | 42   | 15:47 (9)  | 17:46 | 26   | 16:27 (10) | 19:52 | 20:54 | 21:51 |
| 3                   | 08:48   |      | 14:08 (11) | 08:09    |      | 14:28 (11) | 07:04 |      | 16:02 (10) | 06:41 | 05:26 | 04:31 |
|                     | 15:47   | 35   | 14:43 (11) | 16:46    | 35   | 15:45 (9)  | 17:48 | 23   | 16:25 (10) | 19:54 | 20:56 | 21:52 |
| 4                   | 08:47   |      | 14:09 (11) | 08:07    |      | 14:33 (11) | 07:01 |      | 16:04 (10) | 06:39 | 05:23 | 04:30 |
|                     | 15:48   | 36   | 14:45 (11) | 16:48    | 24   | 15:44 (9)  | 17:50 | 18   | 16:22 (10) | 19:56 | 20:58 | 21:54 |
| 5                   | 08:47   |      | 14:09 (11) | 08:05    |      | 15:28 (9)  | 06:58 |      | 16:08 (10) | 06:36 | 05:21 | 04:29 |
|                     | 15:50   | 36   | 14:45 (11) | 16:50    | 15   | 15:43 (9)  | 17:53 | 11   | 16:19 (10) | 19:58 | 21:00 | 21:55 |
| 6                   | 08:46   |      | 14:09 (11) | 08:03    |      | 15:31 (9)  | 06:56 |      |            | 06:33 | 05:19 | 04:28 |
|                     | 15:51   | 36   | 14:45 (11) | 16:53    | 10   | 15:41 (9)  | 17:55 |      |            | 20:00 | 21:02 | 21:56 |
| 7                   | 08:46   |      | 14:09 (11) | 08:00    |      |            | 06:53 |      |            | 06:31 | 05:17 | 04:27 |
|                     | 15:53   | 37   | 14:46 (11) | 16:55    |      |            | 17:57 |      |            | 20:02 | 21:04 | 21:57 |
| 8                   | 08:45   |      | 14:09 (11) | 07:58    |      | 16:09 (10) | 06:51 |      |            | 06:28 | 05:14 | 04:26 |
|                     | 15:54   | 37   | 14:46 (11) | 16:57    | 11   | 16:20 (10) | 17:59 |      |            | 20:04 | 21:06 | 21:58 |
| 9                   | 08:44   |      | 14:10 (11) | 07:56    |      | 16:06 (10) | 06:48 |      |            | 06:25 | 05:12 | 04:26 |
|                     | 15:56   | 37   | 14:47 (11) | 16:59    | 18   | 16:24 (10) | 18:01 |      |            | 20:06 | 21:08 | 21:59 |
| 10                  | 08:43   |      | 14:10 (11) | 07:54    |      | 16:04 (10) | 06:45 |      |            | 06:23 | 05:10 | 04:25 |
|                     | 15:57   | 38   | 14:48 (11) | 17:02    | 21   | 16:25 (10) | 18:03 |      |            | 20:08 | 21:10 | 22:00 |
| 11                  | 08:43   |      | 14:10 (11) | 07:52    |      | 16:02 (10) | 06:43 |      |            | 06:20 | 05:08 | 04:24 |
|                     | 15:59   | 38   | 14:48 (11) | 17:04    | 25   | 16:27 (10) | 18:05 |      |            | 20:10 | 21:12 | 22:01 |
| 12                  | 08:42   |      | 14:11 (11) | 07:50    |      | 16:01 (10) | 06:40 |      |            | 06:17 | 05:06 | 04:24 |
|                     | 16:01   | 38   | 14:49 (11) | 17:06    | 28   | 16:29 (10) | 18:08 |      |            | 20:12 | 21:14 | 22:02 |
| 13                  | 08:41   |      | 14:11 (11) | 07:47    |      | 16:00 (10) | 06:37 |      |            | 06:15 | 05:04 | 04:23 |
|                     | 16:03   | 39   | 14:50 (11) | 17:08    | 30   | 16:30 (10) | 18:10 |      |            | 20:15 | 21:16 | 22:03 |
| 14                  | 08:40   |      | 14:11 (11) | 07:45    |      | 15:59 (10) | 06:35 |      |            | 06:12 | 05:02 | 04:23 |
|                     | 16:04   | 40   | 15:27 (9)  | 17:11    | 32   | 16:31 (10) | 18:12 |      |            | 20:17 | 21:18 | 22:04 |
| 15                  | 08:39   |      | 14:12 (11) | 07:43    |      | 15:58 (10) | 06:32 |      |            | 06:10 | 05:00 | 04:23 |
|                     | 16:06   | 43   | 15:29 (9)  | 17:13    | 34   | 16:32 (10) | 18:14 |      |            | 20:19 | 21:20 | 22:04 |
| 16                  | 08:38   |      | 14:11 (11) | 07:40    |      | 15:58 (10) | 06:29 |      |            | 06:07 | 04:58 | 04:22 |
|                     | 16:08   | 47   | 15:31 (9)  | 17:15    | 35   | 16:33 (10) | 18:16 |      |            | 20:21 | 21:22 | 22:05 |
| 17                  | 08:36   |      | 14:12 (11) | 07:38    |      | 15:56 (10) | 06:27 |      |            | 06:05 | 04:56 | 04:22 |
|                     | 16:10   | 50   | 15:34 (9)  | 17:17    | 37   | 16:33 (10) | 18:18 |      |            | 20:23 | 21:24 | 22:06 |
| 18                  | 08:35   |      | 14:12 (11) | 07:36    |      | 15:57 (10) | 06:24 |      |            | 06:02 | 04:54 | 04:22 |
|                     | 16:12   | 52   | 15:35 (9)  | 17:20    | 37   | 16:34 (10) | 18:20 |      |            | 20:25 | 21:26 | 22:06 |
| 19                  | 08:34   |      | 14:13 (11) | 07:33    |      | 15:56 (10) | 06:21 |      |            | 05:59 | 04:53 | 04:22 |
|                     | 16:14   | 55   | 15:38 (9)  | 17:22    | 37   | 16:33 (10) | 18:22 |      |            | 20:27 | 21:28 | 22:07 |
| 20                  | 08:32   |      | 14:13 (11) | 07:31    |      | 15:56 (10) | 06:19 |      |            | 05:57 | 04:51 | 04:22 |
|                     | 16:16   | 57   | 15:40 (9)  | 17:24    | 38   | 16:34 (10) | 18:24 |      |            | 20:29 | 21:30 | 22:07 |
| 21                  | 08:31   |      | 14:13 (11) | 07:29    |      | 15:55 (10) | 06:16 |      |            | 05:54 | 04:49 | 04:22 |
|                     | 16:18   | 60   | 15:42 (9)  | 17:26    | 39   | 16:34 (10) | 18:27 |      |            | 20:31 | 21:32 | 22:07 |
| 22                  | 08:30   |      | 14:15 (11) | 07:26    |      | 15:56 (10) | 06:13 |      |            | 05:52 | 04:47 | 04:22 |
|                     | 16:20   | 61   | 15:45 (9)  | 17:29    | 38   | 16:34 (10) | 18:29 |      |            | 20:33 | 21:33 | 22:08 |
| 23                  | 08:28   |      | 14:15 (11) | 07:24    |      | 15:56 (10) | 06:11 |      |            | 05:49 | 04:46 | 04:23 |
|                     | 16:22   | 61   | 15:45 (9)  | 17:31    | 37   | 16:33 (10) | 18:31 |      |            | 20:35 | 21:35 | 22:08 |
| 24                  | 08:26   |      | 14:15 (11) | 07:21    |      | 15:55 (10) | 06:08 |      |            | 05:47 | 04:44 | 04:23 |
|                     | 16:24   | 62   | 15:46 (9)  | 17:33    | 38   | 16:33 (10) | 18:33 |      |            | 20:37 | 21:37 | 22:08 |
| 25                  | 08:25   |      | 14:16 (11) | 07:19    |      | 15:56 (10) | 06:05 |      |            | 05:44 | 04:43 | 04:23 |
|                     | 16:26   | 61   | 15:46 (9)  | 17:35    | 37   | 16:33 (10) | 18:35 |      |            | 20:40 | 21:39 | 22:08 |
| 26                  | 08:23   |      | 14:17 (11) | 07:16    |      | 15:56 (10) | 06:03 |      |            | 05:42 | 04:41 | 04:24 |
|                     | 16:28   | 60   | 15:46 (9)  | 17:37    | 36   | 16:32 (10) | 18:37 |      |            | 20:42 | 21:40 | 22:08 |
| 27                  | 08:22   |      | 14:17 (11) | 07:14    |      | 15:58 (10) | 06:00 |      |            | 05:40 | 04:40 | 04:24 |
|                     | 16:31   | 60   | 15:47 (9)  | 17:40    | 33   | 16:31 (10) | 18:39 |      |            | 20:44 | 21:42 | 22:08 |
| 28                  | 08:20   |      | 14:18 (11) | 07:11    |      | 15:58 (10) | 05:57 |      |            | 05:37 | 04:38 | 04:25 |
|                     | 16:33   | 59   | 15:47 (9)  | 17:42    | 32   | 16:30 (10) | 18:41 |      |            | 20:46 | 21:43 | 22:07 |
| 29                  | 08:18   |      | 14:19 (11) |          |      |            | 05:55 |      |            | 05:35 | 04:37 | 04:25 |
|                     | 16:35   | 56   | 15:47 (9)  |          |      |            | 18:43 |      |            | 20:48 | 21:45 | 22:07 |
| 30                  | 08:16   |      | 14:21 (11) |          |      |            | 06:52 |      |            | 05:32 | 04:36 | 04:26 |
|                     | 16:37   | 54   | 15:47 (9)  |          |      |            | 19:45 |      |            | 20:50 | 21:47 | 22:07 |
| 31                  | 08:14   |      | 14:22 (11) |          |      |            | 06:49 |      |            |       | 04:34 |       |
|                     | 16:39   | 51   | 15:47 (9)  |          |      |            | 19:47 |      |            |       | 21:48 |       |
| Potential sun hours | 235     |      |            | 265      |      |            | 365   |      | 425        |       | 507   | 529   |
| Total, worst case   |         | 1464 |            |          | 846  |            |       | 107  |            |       |       |       |
| Sun reduction       |         | 0,15 |            |          | 0,24 |            |       | 0,39 |            |       |       |       |
| Oper. time red.     |         | 0,94 |            |          | 0,94 |            |       | 0,94 |            |       |       |       |
| Wind dir. red.      |         | 0,67 |            |          | 0,67 |            |       | 0,68 |            |       |       |       |
| Total reduction     |         | 0,10 |            |          | 0,15 |            |       | 0,25 |            |       |       |       |
| Total, real         |         | 141  |            |          | 129  |            |       | 26   |            |       |       |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: CJ - Rijasvecumi

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July  | August | September | October | November   | December      |
|---------------------|-------|--------|-----------|---------|------------|---------------|
| 1                   | 04:27 | 05:12  | 06:14     | 07:14   | 07:19      | 15:33 (10)    |
|                     | 22:06 | 21:26  | 20:12     | 18:51   | 16:34      | 23 15:56 (10) |
| 2                   | 04:27 | 05:14  | 06:16     | 07:16   | 07:21      | 15:34 (10)    |
|                     | 22:06 | 21:24  | 20:09     | 18:49   | 16:31      | 19 15:53 (10) |
| 3                   | 04:28 | 05:16  | 06:18     | 07:18   | 07:24      | 15:38 (10)    |
|                     | 22:05 | 21:22  | 20:07     | 18:46   | 16:29      | 13 15:51 (10) |
| 4                   | 04:29 | 05:18  | 06:20     | 07:20   | 07:26      | 15:40 (10)    |
|                     | 22:05 | 21:19  | 20:04     | 18:43   | 16:27      | 13 15:39 (10) |
| 5                   | 04:30 | 05:20  | 06:22     | 07:22   | 07:28      | 15:02 (9)     |
|                     | 22:04 | 21:17  | 20:01     | 18:41   | 16:25      | 8 15:10 (9)   |
| 6                   | 04:31 | 05:22  | 06:24     | 07:24   | 07:30      | 14:59 (9)     |
|                     | 22:04 | 21:15  | 19:59     | 18:38   | 16:23      | 13 15:12 (9)  |
| 7                   | 04:32 | 05:24  | 06:26     | 07:26   | 07:32      | 14:57 (9)     |
|                     | 22:03 | 21:13  | 19:56     | 18:36   | 16:21      | 17 15:14 (9)  |
| 8                   | 04:34 | 05:26  | 06:28     | 07:28   | 07:34      | 14:01 (11)    |
|                     | 22:02 | 21:11  | 19:53     | 18:33   | 16:19      | 31 15:16 (9)  |
| 9                   | 04:35 | 05:28  | 06:30     | 07:30   | 07:37      | 13:57 (11)    |
|                     | 22:01 | 21:09  | 19:51     | 18:30   | 16:17      | 39 15:16 (9)  |
| 10                  | 04:36 | 05:30  | 06:32     | 07:32   | 07:39      | 13:56 (11)    |
|                     | 22:00 | 21:06  | 19:48     | 18:28   | 16:15      | 45 15:18 (9)  |
| 11                  | 04:37 | 05:32  | 06:34     | 07:34   | 07:41      | 13:54 (11)    |
|                     | 21:59 | 21:04  | 19:45     | 18:25   | 16:13      | 49 15:18 (9)  |
| 12                  | 04:39 | 05:34  | 06:36     | 07:36   | 07:43      | 13:52 (11)    |
|                     | 21:58 | 21:02  | 19:43     | 18:22   | 17:01 (10) | 52 15:18 (9)  |
| 13                  | 04:40 | 05:36  | 06:38     | 07:39   | 07:45      | 13:52 (11)    |
|                     | 21:57 | 20:59  | 19:40     | 18:20   | 17:02 (10) | 55 15:19 (9)  |
| 14                  | 04:41 | 05:38  | 06:40     | 07:41   | 07:47      | 13:51 (11)    |
|                     | 21:56 | 20:57  | 19:37     | 18:17   | 17:02 (10) | 57 15:19 (9)  |
| 15                  | 04:43 | 05:40  | 06:42     | 07:43   | 07:49      | 13:51 (11)    |
|                     | 21:54 | 20:55  | 19:35     | 18:15   | 17:04 (10) | 59 15:20 (9)  |
| 16                  | 04:44 | 05:42  | 06:44     | 07:45   | 07:52      | 13:50 (11)    |
|                     | 21:53 | 20:52  | 19:32     | 18:12   | 17:04 (10) | 60 15:20 (9)  |
| 17                  | 04:46 | 05:44  | 06:46     | 07:47   | 07:54      | 13:49 (11)    |
|                     | 21:52 | 20:50  | 19:29     | 18:10   | 17:04 (10) | 61 15:19 (9)  |
| 18                  | 04:47 | 05:46  | 06:48     | 07:49   | 07:56      | 13:50 (11)    |
|                     | 21:50 | 20:47  | 19:26     | 18:07   | 17:04 (10) | 61 15:20 (9)  |
| 19                  | 04:49 | 05:48  | 06:50     | 07:51   | 07:58      | 13:49 (11)    |
|                     | 21:49 | 20:45  | 19:24     | 18:05   | 17:05 (10) | 62 15:20 (9)  |
| 20                  | 04:51 | 05:50  | 06:52     | 07:53   | 08:00      | 13:49 (11)    |
|                     | 21:47 | 20:43  | 19:21     | 18:02   | 17:05 (10) | 61 15:19 (9)  |
| 21                  | 04:52 | 05:52  | 06:54     | 07:55   | 08:02      | 13:50 (11)    |
|                     | 21:46 | 20:40  | 19:18     | 18:00   | 17:04 (10) | 61 15:20 (9)  |
| 22                  | 04:54 | 05:54  | 06:56     | 07:58   | 08:04      | 13:49 (11)    |
|                     | 21:44 | 20:38  | 19:16     | 17:57   | 17:04 (10) | 60 15:18 (9)  |
| 23                  | 04:56 | 05:56  | 06:58     | 08:00   | 08:06      | 13:49 (11)    |
|                     | 21:42 | 20:35  | 19:13     | 17:55   | 17:04 (10) | 57 15:16 (9)  |
| 24                  | 04:57 | 05:58  | 07:00     | 08:02   | 08:08      | 13:49 (11)    |
|                     | 21:41 | 20:33  | 19:10     | 17:52   | 17:03 (10) | 54 15:14 (9)  |
| 25                  | 04:59 | 06:00  | 07:02     | 08:04   | 08:10      | 13:50 (11)    |
|                     | 21:39 | 20:30  | 19:08     | 17:50   | 17:03 (10) | 51 15:13 (9)  |
| 26                  | 05:01 | 06:02  | 07:04     | 08:06   | 08:12      | 13:50 (11)    |
|                     | 21:37 | 20:27  | 19:05     | 16:48   | 16:03 (10) | 49 15:11 (9)  |
| 27                  | 05:03 | 06:04  | 07:06     | 08:08   | 08:14      | 13:51 (11)    |
|                     | 21:35 | 20:25  | 19:02     | 16:45   | 16:02 (10) | 46 15:10 (9)  |
| 28                  | 05:05 | 06:06  | 07:08     | 08:10   | 08:16      | 13:51 (11)    |
|                     | 21:33 | 20:22  | 18:59     | 16:43   | 16:00 (10) | 42 15:08 (9)  |
| 29                  | 05:06 | 06:08  | 07:10     | 08:12   | 08:17      | 13:51 (11)    |
|                     | 21:32 | 20:20  | 18:57     | 16:40   | 16:00 (10) | 39 14:30 (11) |
| 30                  | 05:08 | 06:10  | 07:12     | 08:14   | 08:19      | 13:52 (11)    |
|                     | 21:30 | 20:17  | 18:54     | 16:38   | 15:59 (10) | 38 14:30 (11) |
| 31                  | 05:10 | 06:12  | 07:14     | 08:16   | 08:21      | 14:08 (11)    |
|                     | 21:28 | 20:15  | 18:51     | 16:36   | 15:58 (10) | 34 15:43 (11) |
| Potential sun hours | 530   | 470    | 385       | 324     | 248        | 216           |
| Total, worst case   |       |        |           | 735     | 1282       | 1055          |
| Sun reduction       |       |        |           | 0,27    | 0,09       | 0,09          |
| Oper. time red.     |       |        |           | 0,94    | 0,94       | 0,94          |
| Wind dir. red.      |       |        |           | 0,68    | 0,66       | 0,67          |
| Total reduction     |       |        |           | 0,17    | 0,06       | 0,05          |
| Total, real         |       |        |           | 127     | 74         | 57            |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CK - Kalvani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January |      | February   |       | March      |       | April      |       | May   |       | June |  |
|---------------------|---------|------|------------|-------|------------|-------|------------|-------|-------|-------|------|--|
| 1                   | 08:48   |      | 13:50 (11) | 08:12 | 14:10 (11) | 07:09 | 15:49 (10) | 06:47 | 05:30 | 04:33 |      |  |
|                     | 15:45   | 39   | 14:29 (11) | 16:42 | 15:40 (9)  | 17:44 | 16:23 (10) | 19:50 | 20:52 | 21:50 |      |  |
| 2                   | 08:48   |      | 13:51 (11) | 08:11 | 14:12 (11) | 07:06 | 15:51 (10) | 06:44 | 05:28 | 04:32 |      |  |
|                     | 15:46   | 39   | 14:30 (11) | 16:44 | 15:39 (9)  | 17:46 | 16:22 (10) | 19:52 | 20:54 | 21:51 |      |  |
| 3                   | 08:48   |      | 13:51 (11) | 08:09 | 14:16 (11) | 07:04 | 15:52 (10) | 06:41 | 05:26 | 04:31 |      |  |
|                     | 15:47   | 39   | 14:30 (11) | 16:46 | 15:37 (9)  | 17:48 | 16:20 (10) | 19:54 | 20:56 | 21:52 |      |  |
| 4                   | 08:47   |      | 13:52 (11) | 08:07 | 15:20 (9)  | 07:01 | 15:54 (10) | 06:39 | 05:23 | 04:30 |      |  |
|                     | 15:48   | 39   | 14:31 (11) | 16:48 | 15:36 (9)  | 17:50 | 16:18 (10) | 19:56 | 20:58 | 21:54 |      |  |
| 5                   | 08:47   |      | 13:52 (11) | 08:05 | 15:23 (9)  | 06:58 | 15:57 (10) | 06:36 | 05:21 | 04:29 |      |  |
|                     | 15:50   | 40   | 14:32 (11) | 16:50 | 15:35 (9)  | 17:53 | 16:16 (10) | 19:58 | 21:00 | 21:55 |      |  |
| 6                   | 08:46   |      | 13:52 (11) | 08:03 | 15:28 (9)  | 06:56 | 16:01 (10) | 06:33 | 05:19 | 04:28 |      |  |
|                     | 15:51   | 40   | 14:32 (11) | 16:53 | 16:10 (10) | 17:55 | 16:11 (10) | 20:00 | 21:02 | 21:56 |      |  |
| 7                   | 08:46   |      | 13:52 (11) | 08:00 | 15:59 (10) | 06:53 |            | 06:31 | 05:17 | 04:27 |      |  |
|                     | 15:53   | 40   | 14:32 (11) | 16:55 | 16:14 (10) | 17:57 |            | 20:02 | 21:04 | 21:57 |      |  |
| 8                   | 08:45   |      | 13:52 (11) | 07:58 | 15:57 (10) | 06:51 |            | 06:28 | 05:14 | 04:26 |      |  |
|                     | 15:54   | 41   | 14:33 (11) | 16:57 | 16:18 (10) | 17:59 |            | 20:04 | 21:06 | 21:58 |      |  |
| 9                   | 08:44   |      | 13:52 (11) | 07:56 | 15:55 (10) | 06:48 |            | 06:25 | 05:12 | 04:26 |      |  |
|                     | 15:56   | 41   | 14:33 (11) | 16:59 | 16:20 (10) | 18:01 |            | 20:06 | 21:08 | 21:59 |      |  |
| 10                  | 08:44   |      | 13:53 (11) | 07:54 | 15:53 (10) | 06:45 |            | 06:23 | 05:10 | 04:25 |      |  |
|                     | 15:57   | 41   | 14:34 (11) | 17:02 | 16:21 (10) | 18:03 |            | 20:08 | 21:10 | 22:00 |      |  |
| 11                  | 08:43   |      | 13:53 (11) | 07:52 | 15:52 (10) | 06:43 |            | 06:20 | 05:08 | 04:24 |      |  |
|                     | 15:59   | 46   | 15:21 (9)  | 17:04 | 16:23 (10) | 18:05 |            | 20:10 | 21:12 | 22:01 |      |  |
| 12                  | 08:42   |      | 13:54 (11) | 07:50 | 15:51 (10) | 06:40 |            | 06:17 | 05:06 | 04:24 |      |  |
|                     | 16:01   | 48   | 15:23 (9)  | 17:06 | 16:24 (10) | 18:08 |            | 20:12 | 21:14 | 22:02 |      |  |
| 13                  | 08:41   |      | 13:54 (11) | 07:47 | 15:50 (10) | 06:37 |            | 06:15 | 05:04 | 04:23 |      |  |
|                     | 16:03   | 51   | 15:25 (9)  | 17:08 | 16:25 (10) | 18:10 |            | 20:15 | 21:16 | 22:03 |      |  |
| 14                  | 08:40   |      | 13:54 (11) | 07:45 | 15:49 (10) | 06:35 |            | 06:12 | 05:02 | 04:23 |      |  |
|                     | 16:04   | 55   | 15:27 (9)  | 17:11 | 16:26 (10) | 18:12 |            | 20:17 | 21:18 | 22:04 |      |  |
| 15                  | 08:39   |      | 13:55 (11) | 07:43 | 15:48 (10) | 06:32 |            | 06:10 | 05:00 | 04:23 |      |  |
|                     | 16:06   | 56   | 15:29 (9)  | 17:13 | 16:26 (10) | 18:14 |            | 20:19 | 21:20 | 22:04 |      |  |
| 16                  | 08:38   |      | 13:55 (11) | 07:40 | 15:48 (10) | 06:29 |            | 06:07 | 04:58 | 04:22 |      |  |
|                     | 16:08   | 59   | 15:31 (9)  | 17:15 | 16:27 (10) | 18:16 |            | 20:21 | 21:22 | 22:05 |      |  |
| 17                  | 08:36   |      | 13:55 (11) | 07:38 | 15:47 (10) | 06:27 |            | 06:05 | 04:56 | 04:22 |      |  |
|                     | 16:10   | 63   | 15:34 (9)  | 17:17 | 16:27 (10) | 18:18 |            | 20:23 | 21:24 | 22:06 |      |  |
| 18                  | 08:35   |      | 13:55 (11) | 07:36 | 15:47 (10) | 06:24 |            | 06:02 | 04:54 | 04:22 |      |  |
|                     | 16:12   | 64   | 15:35 (9)  | 17:20 | 16:28 (10) | 18:20 |            | 20:25 | 21:26 | 22:06 |      |  |
| 19                  | 08:34   |      | 13:57 (11) | 07:33 | 15:46 (10) | 06:21 |            | 05:59 | 04:53 | 04:22 |      |  |
|                     | 16:14   | 65   | 15:37 (9)  | 17:22 | 16:28 (10) | 18:22 |            | 20:27 | 21:28 | 22:07 |      |  |
| 20                  | 08:32   |      | 13:57 (11) | 07:31 | 15:47 (10) | 06:19 |            | 05:57 | 04:51 | 04:22 |      |  |
|                     | 16:16   | 65   | 15:38 (9)  | 17:24 | 16:28 (10) | 18:24 |            | 20:29 | 21:30 | 22:07 |      |  |
| 21                  | 08:31   |      | 13:57 (11) | 07:29 | 15:46 (10) | 06:16 |            | 05:54 | 04:49 | 04:22 |      |  |
|                     | 16:18   | 66   | 15:38 (9)  | 17:26 | 16:28 (10) | 18:27 |            | 20:31 | 21:32 | 22:07 |      |  |
| 22                  | 08:30   |      | 13:58 (11) | 07:26 | 15:47 (10) | 06:13 |            | 05:52 | 04:47 | 04:22 |      |  |
|                     | 16:20   | 66   | 15:39 (9)  | 17:29 | 16:28 (10) | 18:29 |            | 20:33 | 21:33 | 22:08 |      |  |
| 23                  | 08:28   |      | 13:59 (11) | 07:24 | 15:46 (10) | 06:11 |            | 05:49 | 04:46 | 04:23 |      |  |
|                     | 16:22   | 66   | 15:40 (9)  | 17:31 | 16:28 (10) | 18:31 |            | 20:35 | 21:35 | 22:08 |      |  |
| 24                  | 08:26   |      | 13:59 (11) | 07:21 | 15:46 (10) | 06:08 |            | 05:47 | 04:44 | 04:23 |      |  |
|                     | 16:24   | 65   | 15:40 (9)  | 17:33 | 16:27 (10) | 18:33 |            | 20:37 | 21:37 | 22:08 |      |  |
| 25                  | 08:25   |      | 14:00 (11) | 07:19 | 15:47 (10) | 06:05 |            | 05:45 | 04:43 | 04:23 |      |  |
|                     | 16:26   | 64   | 15:40 (9)  | 17:35 | 16:27 (10) | 18:35 |            | 20:40 | 21:39 | 22:08 |      |  |
| 26                  | 08:23   |      | 14:01 (11) | 07:16 | 15:47 (10) | 06:03 |            | 05:42 | 04:41 | 04:24 |      |  |
|                     | 16:28   | 62   | 15:40 (9)  | 17:37 | 16:26 (10) | 18:37 |            | 20:42 | 21:40 | 22:08 |      |  |
| 27                  | 08:22   |      | 14:02 (11) | 07:14 | 15:48 (10) | 06:00 |            | 05:40 | 04:40 | 04:24 |      |  |
|                     | 16:31   | 61   | 15:40 (9)  | 17:40 | 16:26 (10) | 18:39 |            | 20:44 | 21:42 | 22:08 |      |  |
| 28                  | 08:20   |      | 14:03 (11) | 07:11 | 15:49 (10) | 05:57 |            | 05:37 | 04:38 | 04:25 |      |  |
|                     | 16:33   | 58   | 15:40 (9)  | 17:42 | 16:24 (10) | 18:41 |            | 20:46 | 21:43 | 22:07 |      |  |
| 29                  | 08:18   |      | 14:04 (11) |       |            | 05:55 |            | 05:35 | 04:37 | 04:25 |      |  |
|                     | 16:35   | 57   | 15:40 (9)  |       |            | 18:43 |            | 20:48 | 21:45 | 22:07 |      |  |
| 30                  | 08:16   |      | 14:06 (11) |       |            | 06:52 |            | 05:33 | 04:36 | 04:26 |      |  |
|                     | 16:37   | 53   | 15:40 (9)  |       |            | 19:45 |            | 20:50 | 21:47 | 22:07 |      |  |
| 31                  | 08:14   |      | 14:07 (11) |       |            | 06:49 |            |       | 04:34 |       |      |  |
|                     | 16:39   | 50   | 15:40 (9)  |       |            | 19:47 |            |       | 21:48 |       |      |  |
| Potential sun hours | 235     |      | 265        |       | 365        |       | 425        |       | 507   |       | 529  |  |
| Total, worst case   |         | 1639 |            | 929   |            | 146   |            |       |       |       |      |  |
| Sun reduction       |         | 0,15 |            | 0,24  |            | 0,39  |            |       |       |       |      |  |
| Oper. time red.     |         | 0,94 |            | 0,94  |            | 0,94  |            |       |       |       |      |  |
| Wind dir. red.      |         | 0,66 |            | 0,67  |            | 0,68  |            |       |       |       |      |  |
| Total reduction     |         | 0,10 |            | 0,15  |            | 0,25  |            |       |       |       |      |  |
| Total, real         |         | 158  |            | 142   |            | 36    |            |       |       |       |      |  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: CK - Kalvani

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July           | August         | September      | October        | November       | December                 |
|---------------------|----------------|----------------|----------------|----------------|----------------|--------------------------|
| 1                   | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 15:22 (10)<br>15:52 (10) |
| 2                   | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 15:23 (10)<br>15:50 (10) |
| 3                   | 04:28<br>22:05 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 15:26 (10)<br>15:48 (10) |
| 4                   | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 15:28 (10)<br>15:46 (10) |
| 5                   | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 15:32 (10)<br>15:43 (10) |
| 6                   | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 15:40 (10)<br>15:03 (9)  |
| 7                   | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 14:51 (9)<br>15:06 (9)   |
| 8                   | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 14:50 (9)<br>15:08 (9)   |
| 9                   | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 13:44 (11)<br>15:09 (9)  |
| 10                  | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 13:42 (11)<br>15:10 (9)  |
| 11                  | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 13:39 (11)<br>15:11 (9)  |
| 12                  | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 13:38 (11)<br>15:11 (9)  |
| 13                  | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 13:37 (11)<br>15:12 (9)  |
| 14                  | 04:41<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 13:36 (11)<br>15:12 (9)  |
| 15                  | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 13:36 (11)<br>15:13 (9)  |
| 16                  | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 13:35 (11)<br>15:13 (9)  |
| 17                  | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 13:34 (11)<br>15:13 (9)  |
| 18                  | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 13:34 (11)<br>15:14 (9)  |
| 19                  | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>16:00 | 13:33 (11)<br>15:14 (9)  |
| 20                  | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>16:00 | 13:33 (11)<br>15:14 (9)  |
| 21                  | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>16:00 | 13:33 (11)<br>15:14 (9)  |
| 22                  | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>16:00 | 13:33 (11)<br>15:14 (9)  |
| 23                  | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>16:00 | 13:33 (11)<br>15:14 (9)  |
| 24                  | 04:57<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>16:00 | 13:33 (11)<br>15:13 (9)  |
| 25                  | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>16:00 | 13:34 (11)<br>15:13 (9)  |
| 26                  | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 08:06<br>16:48 | 08:12<br>15:58 | 13:34 (11)<br>15:11 (9)  |
| 27                  | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 08:08<br>16:45 | 08:14<br>15:56 | 13:34 (11)<br>15:10 (9)  |
| 28                  | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 08:10<br>16:43 | 08:16<br>15:55 | 13:34 (11)<br>15:08 (9)  |
| 29                  | 05:06<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 08:12<br>16:40 | 08:17<br>15:55 | 13:34 (11)<br>15:07 (9)  |
| 30                  | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 08:14<br>16:38 | 08:19<br>15:54 | 13:35 (11)<br>15:05 (9)  |
| 31                  | 05:10<br>21:28 | 06:12<br>20:15 | 07:14<br>18:51 | 08:16<br>16:36 | 08:20<br>15:53 | 13:35 (11)<br>15:43      |
| Potential sun hours | 530            | 470            | 385            | 324            | 248            | 216                      |
| Total, worst case   |                |                |                | 836            | 1416           | 1220                     |
| Sun reduction       |                |                |                | 0,27           | 0,09           | 0,09                     |
| Oper. time red.     |                |                |                | 0,94           | 0,94           | 0,94                     |
| Wind dir. red.      |                |                |                | 0,68           | 0,66           | 0,66                     |
| Total reduction     |                |                |                | 0,17           | 0,06           | 0,05                     |
| Total, real         |                |                |                | 144            | 82             | 66                       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst & Real case  
Assumptions for shadow calculations

Reference year for calendar

2025

Shadow receptor: CL - Uzkalnini

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                     | January | February | March | April | May | June       | July  | August | September | October | November | December   |
|---------------------|---------|----------|-------|-------|-----|------------|-------|--------|-----------|---------|----------|------------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:46 |     |            |       |        |           | 07:14   | 07:19    | 08:21      |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 25  | 18:49 (11) | 05:30 | 04:33  | 04:27     | 05:12   | 06:14    |            |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 |     | 19:14 (11) | 20:52 | 21:49  | 22:06     | 21:26   | 20:12    | 18:51      |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 24  | 18:49 (11) | 05:28 | 04:32  | 04:27     | 05:14   | 06:16    | 18:51      |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 |     | 19:13 (11) | 20:54 | 21:51  | 22:06     | 21:24   | 20:09    | 18:49      |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 23  | 18:50 (11) | 05:26 | 04:31  | 04:28     | 05:16   | 06:18    | 18:49      |
| 4                   | 08:47   | 08:06    | 07:01 | 06:38 |     | 19:13 (11) | 20:56 | 21:52  | 22:05     | 21:21   | 20:07    | 18:46      |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 21  | 18:50 (11) | 05:23 | 04:30  | 04:29     | 05:18   | 06:20    | 18:46      |
| 5                   | 08:47   | 08:04    | 06:58 | 06:36 |     | 19:11 (11) | 20:58 | 21:53  | 22:05     | 21:19   | 20:04    | 18:43      |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 20  | 18:50 (11) | 05:21 | 04:29  | 04:30     | 05:20   | 06:22    | 18:53 (11) |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 |     | 19:10 (11) | 21:00 | 21:55  | 22:04     | 21:17   | 20:01    | 18:41      |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 16  | 18:52 (11) | 05:19 | 04:28  | 04:31     | 05:22   | 06:24    | 18:49 (11) |
| 7                   | 08:46   | 08:00    | 06:53 | 06:31 |     | 19:08 (11) | 21:02 | 21:56  | 22:03     | 21:15   | 20:01    | 18:41      |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 11  | 18:54 (11) | 05:17 | 04:27  | 04:32     | 05:24   | 06:26    | 18:47 (11) |
| 8                   | 08:45   | 07:58    | 06:50 | 06:28 |     | 19:05 (11) | 21:04 | 21:57  | 22:03     | 21:13   | 20:01    | 18:45 (11) |
|                     | 15:54   | 16:57    | 17:59 | 20:04 |     |            | 05:14 | 04:26  | 04:33     | 05:26   | 06:28    | 18:45 (11) |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 |     |            | 21:06 | 21:58  | 22:02     | 21:11   | 20:01    | 18:41      |
|                     | 15:56   | 16:59    | 18:01 | 20:06 |     |            | 05:12 | 04:26  | 04:35     | 05:28   | 06:30    | 18:44 (11) |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 |     |            | 21:08 | 21:59  | 22:01     | 21:08   | 19:51    | 18:41      |
|                     | 15:57   | 17:02    | 18:03 | 20:08 |     |            | 05:10 | 04:25  | 04:36     | 05:30   | 06:32    | 18:43 (11) |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 |     |            | 21:10 | 22:00  | 22:00     | 21:06   | 19:48    | 18:41      |
|                     | 15:59   | 17:04    | 18:05 | 20:10 |     |            | 05:08 | 04:24  | 04:37     | 05:32   | 06:34    | 18:42 (11) |
| 12                  | 08:42   | 07:49    | 06:40 | 06:17 |     |            | 21:12 | 22:01  | 21:59     | 21:04   | 19:45    | 18:41      |
|                     | 16:01   | 17:06    | 18:08 | 20:12 |     |            | 05:06 | 04:24  | 04:39     | 05:34   | 06:36    | 18:41 (11) |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 |     |            | 21:14 | 22:02  | 21:58     | 21:02   | 19:43    | 18:41 (11) |
|                     | 16:03   | 17:08    | 18:10 | 20:14 |     |            | 05:04 | 04:23  | 04:40     | 05:36   | 06:38    | 18:41 (11) |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 |     |            | 21:16 | 22:03  | 21:57     | 20:59   | 19:40    | 18:41 (11) |
|                     | 16:04   | 17:11    | 18:12 | 20:17 |     |            | 05:02 | 04:23  | 04:41     | 05:38   | 06:40    | 18:41 (11) |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 |     |            | 21:18 | 22:04  | 21:55     | 20:57   | 19:37    | 18:41 (11) |
|                     | 16:06   | 17:13    | 18:14 | 20:19 |     |            | 05:00 | 04:23  | 04:43     | 05:40   | 06:42    | 18:41 (11) |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 |     |            | 21:20 | 22:04  | 21:54     | 20:55   | 19:34    | 18:41 (11) |
|                     | 16:08   | 17:15    | 18:16 | 20:21 |     |            | 04:58 | 04:22  | 04:44     | 05:42   | 06:44    | 18:41 (11) |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 |     |            | 21:22 | 22:05  | 21:53     | 20:52   | 19:32    | 18:41 (11) |
|                     | 16:10   | 17:17    | 18:18 | 20:23 |     |            | 04:56 | 04:22  | 04:46     | 05:44   | 06:46    | 18:41 (11) |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 |     |            | 21:24 | 22:06  | 21:51     | 20:50   | 19:29    | 18:41 (11) |
|                     | 16:12   | 17:20    | 18:20 | 20:25 |     |            | 04:54 | 04:22  | 04:47     | 05:46   | 06:48    | 18:42 (11) |
| 19                  | 08:34   | 07:33    | 06:21 | 06:00 |     |            | 21:26 | 22:06  | 21:50     | 20:47   | 19:26    | 18:42 (11) |
|                     | 16:14   | 17:22    | 18:22 | 20:27 |     |            | 04:53 | 04:22  | 04:49     | 05:48   | 06:50    | 18:42 (11) |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 |     |            | 21:28 | 22:06  | 21:49     | 20:45   | 19:24    | 18:45 (11) |
|                     | 16:16   | 17:24    | 18:24 | 20:29 |     |            | 04:51 | 04:22  | 04:51     | 05:50   | 06:52    | 18:44 (11) |
| 21                  | 08:31   | 07:28    | 06:16 | 05:54 |     |            | 21:30 | 22:07  | 21:47     | 20:42   | 19:21    | 18:43 (11) |
|                     | 16:18   | 17:26    | 18:26 | 20:31 |     |            | 04:49 | 04:22  | 04:52     | 05:52   | 06:54    | 18:47 (11) |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 |     |            | 21:31 | 22:07  | 21:46     | 20:40   | 19:18    | 18:50 (11) |
|                     | 16:20   | 17:28    | 18:29 | 20:33 |     |            | 04:47 | 04:22  | 04:54     | 05:54   | 06:56    | 18:50 (11) |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 |     |            | 21:33 | 22:07  | 21:44     | 20:37   | 19:16    | 18:50 (11) |
|                     | 16:22   | 17:31    | 18:31 | 20:35 |     |            | 04:46 | 04:23  | 04:56     | 05:56   | 06:58    | 18:50 (11) |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 |     |            | 21:35 | 22:08  | 21:42     | 20:35   | 19:13    | 18:50 (11) |
|                     | 16:24   | 17:33    | 18:33 | 20:37 |     |            | 04:44 | 04:23  | 04:57     | 05:58   | 07:00    | 18:50 (11) |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 |     |            | 21:37 | 22:08  | 21:41     | 20:32   | 19:10    | 18:50 (11) |
|                     | 16:26   | 17:35    | 18:35 | 20:39 |     |            | 04:43 | 04:23  | 04:59     | 06:00   | 07:02    | 18:50 (11) |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 |     |            | 21:38 | 22:08  | 21:39     | 20:30   | 19:08    | 18:50 (11) |
|                     | 16:28   | 17:37    | 18:37 | 20:42 |     |            | 04:41 | 04:24  | 05:01     | 06:02   | 07:04    | 18:50 (11) |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 |     |            | 21:40 | 22:08  | 21:37     | 20:27   | 19:05    | 18:50 (11) |
|                     | 16:31   | 17:39    | 18:39 | 20:44 |     |            | 04:40 | 04:24  | 05:03     | 06:04   | 07:06    | 18:50 (11) |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 |     |            | 21:42 | 22:07  | 21:35     | 20:25   | 19:02    | 18:50 (11) |
|                     | 16:33   | 17:42    | 18:41 | 20:46 |     |            | 04:38 | 04:25  | 05:05     | 06:06   | 07:08    | 18:50 (11) |
| 29                  | 08:18   | 05:55    | 05:35 | 05:35 |     |            | 21:43 | 22:07  | 21:33     | 20:22   | 18:59    | 18:50 (11) |
|                     | 16:35   | 18:43    | 18:43 | 20:48 |     |            | 04:37 | 04:25  | 05:06     | 06:08   | 07:10    | 18:50 (11) |
| 30                  | 08:16   | 06:52    | 06:32 | 06:32 |     |            | 21:45 | 22:07  | 21:31     | 20:20   | 18:57    | 18:50 (11) |
|                     | 16:37   | 19:45    | 19:45 | 20:50 |     |            | 04:36 | 04:26  | 05:08     | 06:10   | 07:12    | 18:50 (11) |
| 31                  | 08:14   | 06:49    | 06:29 | 06:29 |     |            | 21:46 | 22:07  | 21:30     | 20:17   | 18:54    | 18:50 (11) |
|                     | 16:39   | 19:47    | 19:47 | 20:50 |     |            | 04:34 | 04:24  | 05:10     | 06:12   | 07:14    | 18:50 (11) |
| Potential sun hours | 235     | 265      | 365   | 425   |     |            | 507   | 529    | 530       | 470     | 385      | 314        |
| Total, worst case   |         |          | 167   | 140   |     |            |       |        |           |         |          | 0,43       |
| Sun reduction       |         |          | 0,39  | 0,48  |     |            |       |        |           |         |          | 0,94       |
| Oper. time red.     |         |          | 0,94  | 0,66  |     |            |       |        |           |         |          | 0,66       |
| Wind dir. red.      |         |          | 0,66  | 0,30  |     |            |       |        |           |         |          | 0,27       |
| Total reduction     |         |          | 0,24  | 0,30  |     |            |       |        |           |         |          | 0,27       |
| Total, real         |         |          | 40    | 42    |     |            |       |        |           |         |          | 83         |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CM - Cakstes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:08 | 06:46 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:51 | 20:54 | 21:51 | 22:06 | 21:23  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:06     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:38 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:50    | 17:52 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:30 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:35   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:50 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:18    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:12    | 15:35    |
| 12                  | 08:42   | 07:49    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:07 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:08    | 18:10 | 20:14 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:40   | 07:47    | 08:39    |
|                     | 16:04   | 17:11    | 18:12 | 20:16 | 21:18 | 22:04 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:34     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:56    | 15:35    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:26    | 18:26 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:23    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:46    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:37 | 21:37 | 22:08 | 21:40 | 20:32  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:26   | 17:35    | 18:35 | 20:39 | 21:38 | 22:08 | 21:39 | 20:30  | 19:07     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:41 | 21:40 | 22:08 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:30   | 17:39    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:54 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:12   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:46 | 22:07 | 21:29 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:28 | 20:14  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case

Shadow receptor: CN - Jaunie Vuš karnieki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April               | May                      | June               |
|---------------------|----------------|----------------|----------------|---------------------|--------------------------|--------------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:49      | 19:01 (12)<br>21:22 (12) | 05:30<br>20:52     |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52      | 18:59 (12)<br>20:54      | 05:28<br>21:51     |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54      | 18:58 (12)<br>20:56      | 05:26<br>21:52     |
| 4                   | 08:47<br>15:49 | 08:06<br>16:48 | 07:01<br>17:50 | 06:39<br>19:56      | 18:57 (12)<br>20:58      | 05:23<br>22:06 (9) |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58      | 18:55 (12)<br>21:00      | 05:21<br>22:30 (9) |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00      | 18:55 (12)<br>19:34 (13) | 05:19<br>21:02     |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02      | 18:54 (12)<br>19:35 (13) | 05:17<br>21:04     |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04      | 18:54 (12)<br>19:38 (13) | 05:14<br>21:06     |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06      | 18:53 (12)<br>19:39 (13) | 05:12<br>21:08     |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08      | 18:54 (12)<br>19:42 (13) | 05:10<br>21:10     |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10      | 18:53 (12)<br>19:43 (13) | 05:08<br>21:12     |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12      | 18:53 (12)<br>19:43 (13) | 05:06<br>21:14     |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14      | 18:54 (12)<br>19:44 (13) | 05:04<br>21:16     |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17      | 18:54 (12)<br>19:43 (13) | 05:02<br>21:18     |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19      | 18:55 (12)<br>19:43 (13) | 05:00<br>21:20     |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21      | 18:55 (12)<br>19:42 (13) | 04:58<br>21:22     |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23      | 18:57 (12)<br>19:41 (13) | 04:56<br>21:24     |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25      | 18:58 (12)<br>19:39 (13) | 04:54<br>21:26     |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27      | 19:01 (12)<br>19:38 (13) | 04:53<br>21:28     |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29      | 19:24 (13)<br>19:37 (13) | 04:51<br>21:30     |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31      | 19:27 (13)<br>19:33 (13) | 04:49<br>21:31     |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33      |                          | 04:47<br>21:33     |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35      |                          | 04:46<br>21:35     |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37      |                          | 04:44<br>21:37     |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39      |                          | 04:43<br>21:38     |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42      |                          | 04:41<br>21:40     |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44      |                          | 04:40<br>21:42     |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46      |                          | 04:38<br>21:43     |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48      |                          | 04:37<br>21:45     |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:33<br>19:07 (12) |                          | 04:36<br>21:46     |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 | 05:30<br>19:17 (12) |                          | 04:34<br>21:48     |
| Potential sun hours | 235            | 265            | 365            | 425                 | 507                      | 529                |
| Total, worst case   |                |                | 27             | 760                 |                          | 423                |
| Sun reduction       |                |                | 0,39           | 0,48                |                          | 0,53               |
| Oper. time red.     |                |                | 0,94           | 0,94                |                          | 0,94               |
| Wind dir. red.      |                |                | 0,65           | 0,65                |                          | 0,62               |
| Total reduction     |                |                | 0,24           | 0,29                |                          | 0,31               |
| Total, real         |                |                | 6              | 222                 |                          | 131                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CN - Jaunie Vu š karnieki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August    | September | October    | November   | December |
|---------------------|-------|-----------|-----------|------------|------------|----------|
| 1                   | 04:27 | 05:12     | 20:28 (9) | 06:14      | 18:53 (12) | 07:14    |
|                     | 22:06 | 21:26     | 20:51 (9) | 20:12      | 19:43 (13) | 18:51    |
| 2                   | 04:28 | 05:14     | 20:28 (9) | 06:16      | 18:52 (12) | 07:16    |
|                     | 22:06 | 21:24     | 20:51 (9) | 20:09      | 19:41 (13) | 18:49    |
| 3                   | 04:28 | 05:16     | 20:29 (9) | 06:18      | 18:52 (12) | 07:18    |
|                     | 22:05 | 21:21     | 20:50 (9) | 20:07      | 19:39 (13) | 18:46    |
| 4                   | 04:29 | 05:18     | 20:29 (9) | 06:20      | 18:51 (12) | 07:20    |
|                     | 22:05 | 21:19     | 20:48 (9) | 20:04      | 19:36 (13) | 18:43    |
| 5                   | 04:30 | 05:20     | 20:29 (9) | 06:22      | 18:50 (12) | 07:22    |
|                     | 22:04 | 21:17     | 20:45 (9) | 20:01      | 19:33 (13) | 18:41    |
| 6                   | 04:31 | 05:22     | 20:30 (9) | 06:24      | 18:50 (12) | 07:24    |
|                     | 22:03 | 21:15     | 20:44 (9) | 19:59      | 19:30 (13) | 18:38    |
| 7                   | 04:32 | 05:24     | 20:31 (9) | 06:26      | 18:50 (12) | 07:26    |
|                     | 22:03 | 21:13     | 20:42 (9) | 19:56      | 19:28 (13) | 18:36    |
| 8                   | 04:34 | 05:26     | 20:33 (9) | 06:28      | 18:51 (12) | 07:28    |
|                     | 22:02 | 21:11     | 20:40 (9) | 19:53      | 19:20 (12) | 18:33    |
| 9                   | 04:35 | 05:28     | 20:35 (9) | 06:30      | 18:51 (12) | 07:30    |
|                     | 22:01 | 21:08     | 20:38 (9) | 19:51      | 19:19 (12) | 18:30    |
| 10                  | 04:36 | 05:30     |           | 06:32      | 18:52 (12) | 07:32    |
|                     | 22:00 | 21:06     |           | 19:48      | 19:17 (12) | 18:28    |
| 11                  | 04:37 | 05:32     |           | 06:34      | 18:53 (12) | 07:34    |
|                     | 21:59 | 21:04     |           | 19:45      | 19:16 (12) | 18:25    |
| 12                  | 04:39 | 05:34     |           | 06:36      | 18:54 (12) | 07:36    |
|                     | 21:58 | 21:02     |           | 19:43      | 19:14 (12) | 18:22    |
| 13                  | 04:40 | 05:36     |           | 06:38      | 18:56 (12) | 07:38    |
|                     | 21:57 | 20:59     |           | 19:40      | 19:11 (12) | 18:20    |
| 14                  | 04:41 | 05:38     |           | 06:40      | 19:00 (12) | 07:41    |
|                     | 21:55 | 20:57     |           | 19:37      | 19:07 (12) | 18:17    |
| 15                  | 04:43 | 05:40     |           | 06:42      | 19:03 (12) | 07:43    |
|                     | 21:54 | 20:55     |           | 19:35      | 18:55      | 16:05    |
| 16                  | 04:44 | 05:42     |           | 06:44      | 19:04 (12) | 07:44    |
|                     | 21:53 | 20:52     |           | 19:32      | 18:53      | 16:03    |
| 17                  | 04:46 | 20:35 (9) | 05:44     | 06:46      | 19:06 (12) | 07:46    |
|                     | 21:51 | 20:43 (9) | 20:50     | 19:29      | 18:10      | 16:02    |
| 18                  | 04:47 | 20:34 (9) | 05:46     | 06:48      | 19:07 (12) | 07:47    |
|                     | 21:50 | 20:45 (9) | 20:47     | 19:26      | 18:07      | 16:00    |
| 19                  | 04:49 | 20:32 (9) | 05:48     | 06:50      | 19:08 (12) | 07:48    |
|                     | 21:49 | 20:46 (9) | 20:45     | 19:24      | 18:05      | 15:58    |
| 20                  | 04:51 | 20:32 (9) | 05:50     | 06:52      | 19:09 (12) | 07:49    |
|                     | 21:47 | 20:48 (9) | 20:42     | 19:21      | 18:02      | 15:57    |
| 21                  | 04:52 | 20:31 (9) | 05:52     | 06:54      | 19:10 (12) | 07:50    |
|                     | 21:45 | 20:48 (9) | 20:40     | 19:18      | 18:00      | 15:55    |
| 22                  | 04:54 | 20:30 (9) | 05:54     | 06:56      | 19:11 (12) | 07:51    |
|                     | 21:44 | 20:49 (9) | 20:37     | 19:16      | 17:57      | 15:54    |
| 23                  | 04:56 | 20:29 (9) | 05:56     | 19:29 (13) | 06:58      | 18:00    |
|                     | 21:42 | 20:49 (9) | 20:35     | 19:13      | 17:55      | 15:52    |
| 24                  | 04:57 | 20:29 (9) | 05:58     | 19:07 (12) | 07:00      | 18:02    |
|                     | 21:41 | 20:50 (9) | 20:32     | 19:10      | 17:52      | 15:51    |
| 25                  | 04:59 | 20:29 (9) | 06:00     | 19:03 (12) | 07:02      | 18:04    |
|                     | 21:39 | 20:51 (9) | 20:30     | 19:08      | 17:50      | 15:49    |
| 26                  | 05:01 | 20:28 (9) | 06:02     | 19:00 (12) | 07:04      | 18:06    |
|                     | 21:37 | 20:51 (9) | 20:27     | 19:05      | 16:48      | 15:48    |
| 27                  | 05:03 | 20:28 (9) | 06:04     | 18:58 (12) | 07:06      | 18:08    |
|                     | 21:35 | 20:52 (9) | 20:25     | 19:03 (12) | 16:45      | 15:47    |
| 28                  | 05:05 | 20:28 (9) | 06:06     | 18:56 (12) | 07:08      | 18:10    |
|                     | 21:33 | 20:52 (9) | 20:22     | 19:44 (13) | 18:59      | 16:43    |
| 29                  | 05:07 | 20:28 (9) | 06:08     | 18:55 (12) | 07:10      | 18:12    |
|                     | 21:31 | 20:52 (9) | 20:20     | 19:44 (13) | 18:57      | 16:40    |
| 30                  | 05:08 | 20:28 (9) | 06:10     | 18:54 (12) | 07:12      | 18:14    |
|                     | 21:30 | 20:52 (9) | 20:17     | 19:44 (13) | 18:54      | 16:38    |
| 31                  | 05:10 | 20:28 (9) | 06:12     | 18:53 (12) | 07:17      | 18:16    |
|                     | 21:28 | 20:52 (9) | 20:14     | 19:44 (13) | 16:36      | 15:43    |
| Potential sun hours | 530   | 470       | 385       | 324        | 248        | 216      |
| Total, worst case   |       | 484       | 452       |            |            |          |
| Sun reduction       | 0,51  | 0,51      | 0,43      |            |            |          |
| Oper. time red.     | 0,94  | 0,94      | 0,94      |            |            |          |
| Wind dir. red.      | 0,62  | 0,64      | 0,65      |            |            |          |
| Total reduction     | 0,30  | 0,31      | 0,26      |            |            |          |
| Total, real         | 86    | 149       | 118       |            |            |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CO - Upmalnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April                    | May            | June                     |                |
|---------------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 17:05 (14)<br>17:17 (14) | 06:47<br>19:50 | 17:54 (12)<br>19:20 (13) | 05:30<br>20:52 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 17:04 (14)<br>17:20 (14) | 06:44<br>19:52 | 17:53 (12)<br>19:20 (13) | 05:28<br>20:54 |
| 3                   | 08:47<br>15:47 | 08:09<br>16:46 | 07:03<br>17:48 | 17:03 (14)<br>17:22 (14) | 06:41<br>19:54 | 17:55 (12)<br>19:22 (13) | 05:26<br>20:56 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:48 | 07:01<br>17:50 | 17:02 (14)<br>17:24 (14) | 06:39<br>19:56 | 17:55 (12)<br>19:21 (13) | 05:23<br>20:58 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:58<br>17:53 | 17:03 (14)<br>17:24 (14) | 06:36<br>19:58 | 17:55 (12)<br>19:21 (13) | 05:21<br>21:00 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 17:02 (14)<br>17:24 (14) | 06:33<br>20:00 | 17:57 (12)<br>19:21 (13) | 05:19<br>21:02 |
| 7                   | 08:46<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 17:02 (14)<br>17:23 (14) | 06:31<br>20:02 | 17:58 (12)<br>19:21 (13) | 05:17<br>21:04 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 17:03 (14)<br>17:23 (14) | 06:28<br>20:04 | 18:00 (12)<br>19:21 (13) | 05:14<br>21:06 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 17:03 (14)<br>17:21 (14) | 06:25<br>20:06 | 18:01 (12)<br>19:20 (13) | 05:12<br>21:08 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 17:04 (14)<br>17:19 (14) | 06:23<br>20:08 | 18:04 (12)<br>19:20 (13) | 05:10<br>21:10 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 17:07 (14)<br>17:18 (14) | 06:20<br>20:10 | 18:07 (12)<br>19:19 (13) | 05:08<br>21:12 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12           | 05:06<br>21:14 | 18:50 (13)<br>19:17 (13) | 05:06<br>21:14 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 17:14 (12)<br>17:29 (12) | 06:15<br>20:14 | 18:51 (13)<br>19:16 (13) | 05:04<br>21:16 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 17:11 (12)<br>17:33 (12) | 06:12<br>20:17 | 18:52 (13)<br>19:14 (13) | 05:02<br>21:18 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 17:08 (12)<br>17:35 (12) | 06:10<br>20:19 | 18:54 (13)<br>19:13 (13) | 05:00<br>21:20 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 17:05 (12)<br>17:36 (12) | 06:07<br>20:21 | 18:55 (13)<br>19:10 (13) | 04:58<br>21:22 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 17:03 (12)<br>17:37 (12) | 06:05<br>20:23 | 18:59 (13)<br>19:07 (13) | 04:56<br>21:24 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 17:02 (12)<br>17:39 (12) | 06:02<br>20:25 | 04:54<br>21:26           | 04:54<br>21:26 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 17:00 (12)<br>17:40 (12) | 05:59<br>20:27 | 04:53<br>21:28           | 04:53<br>21:28 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 16:59 (12)<br>17:40 (12) | 05:57<br>20:29 | 04:51<br>21:30           | 04:51<br>21:30 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:27 | 16:58 (12)<br>17:41 (12) | 05:54<br>20:31 | 04:49<br>21:31           | 04:49<br>21:31 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 16:57 (12)<br>17:41 (12) | 05:52<br>20:33 | 04:47<br>21:33           | 04:47<br>21:33 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 16:56 (12)<br>17:41 (12) | 05:49<br>20:35 | 04:46<br>21:35           | 04:46<br>21:35 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 16:55 (12)<br>17:41 (12) | 05:47<br>20:37 | 04:44<br>21:37           | 04:44<br>21:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 16:55 (12)<br>17:42 (12) | 05:45<br>20:40 | 04:43<br>21:38           | 04:43<br>21:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:37 | 06:03<br>18:37 | 16:54 (12)<br>17:41 (12) | 05:42<br>20:42 | 04:41<br>21:40           | 04:41<br>21:40 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 16:53 (12)<br>17:41 (12) | 05:40<br>20:44 | 04:40<br>21:42           | 04:40<br>21:42 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 16:54 (12)<br>18:14 (13) | 05:37<br>20:46 | 04:38<br>21:43           | 04:38<br>21:43 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 16:53 (12)<br>18:16 (13) | 05:35<br>20:48 | 04:37<br>21:45           | 04:37<br>21:45 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 17:53 (12)<br>19:18 (13) | 05:33<br>20:50 | 04:36<br>21:46           | 04:36<br>21:46 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 | 17:54 (12)<br>19:20 (13) | 20:50          | 04:34<br>21:48           | 04:34<br>21:48 |
| Potential sun hours | 235            | 265            | 365            | 425                      | 507            | 529                      | 679            |
| Total, worst case   |                |                |                |                          |                |                          |                |
| Sun reduction       |                | 12             | 1025           | 816                      | 764            | 679                      | 54             |
| Oper. time red.     |                | 0,24           | 0,39           | 0,48                     | 0,53           | 0,54                     | 0,94           |
| Wind dir. red.      |                | 0,94           | 0,94           | 0,94                     | 0,94           | 0,94                     | 0,94           |
| Total reduction     |                | 0,66           | 0,66           | 0,66                     | 0,62           | 0,62                     | 0,62           |
| Total, real         |                | 0,15           | 0,24           | 0,30                     | 0,31           | 0,31                     | 0,31           |
|                     |                | 2              | 247            | 242                      | 237            | 212                      |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CO - Upmalnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | July  |           | August    |       | September  |            | October    |            | November   |       | December   |       |
|---------------------|-------|-----------|-----------|-------|------------|------------|------------|------------|------------|-------|------------|-------|
| 1                   | 04:27 | 20:21 (9) | 05:12     | 28    | 20:20 (9)  | 06:14      | 18:10 (12) | 07:14      | 17:54 (12) | 07:19 | 08:21      |       |
|                     | 22:06 | 22        | 20:43 (9) | 21:26 | 20:48 (9)  | 20:12      | 35         | 19:17 (13) | 18:51      | 14    | 18:08 (12) | 16:34 |
| 2                   | 04:28 | 20:21 (9) | 05:14     |       | 20:21 (9)  | 06:16      |            | 18:04 (12) | 07:16      |       | 07:21      | 08:23 |
|                     | 22:06 | 23        | 20:44 (9) | 21:24 | 20:48 (9)  | 20:09      | 48         | 19:18 (13) | 18:49      |       | 16:31      | 15:41 |
| 3                   | 04:28 | 20:20 (9) | 05:16     |       | 20:22 (9)  | 06:18      |            | 18:01 (12) | 07:18      |       | 07:23      | 08:24 |
|                     | 22:05 | 24        | 20:44 (9) | 21:22 | 20:47 (9)  | 20:07      | 53         | 19:18 (13) | 18:46      | 11    | 17:56 (14) | 16:29 |
| 4                   | 04:29 | 20:20 (9) | 05:18     |       | 20:23 (9)  | 06:20      |            | 17:58 (12) | 07:20      |       | 17:42 (14) | 07:26 |
|                     | 22:05 | 24        | 20:44 (9) | 21:19 | 20:46 (9)  | 20:04      | 59         | 19:18 (13) | 18:43      | 15    | 17:57 (14) | 16:27 |
| 5                   | 04:30 | 20:20 (9) | 05:20     |       | 20:24 (9)  | 06:22      |            | 17:55 (12) | 07:22      |       | 17:41 (14) | 07:28 |
|                     | 22:04 | 25        | 20:45 (9) | 21:17 | 20:44 (9)  | 20:01      | 64         | 19:17 (13) | 18:41      | 17    | 17:58 (14) | 16:25 |
| 6                   | 04:31 | 20:19 (9) | 05:22     |       | 20:25 (9)  | 06:24      |            | 17:53 (12) | 07:24      |       | 17:39 (14) | 07:30 |
|                     | 22:03 | 26        | 20:45 (9) | 21:15 | 20:42 (9)  | 19:59      | 67         | 19:17 (13) | 18:38      | 20    | 17:59 (14) | 16:23 |
| 7                   | 04:32 | 20:19 (9) | 05:24     |       | 20:28 (9)  | 06:26      |            | 17:51 (12) | 07:26      |       | 17:38 (14) | 07:32 |
|                     | 22:03 | 27        | 20:46 (9) | 21:13 | 12         | 20:40 (9)  | 19:56      | 70         | 19:17 (13) | 21    | 17:59 (14) | 16:21 |
| 8                   | 04:34 | 20:19 (9) | 05:26     |       |            | 06:28      |            | 17:50 (12) | 07:28      |       | 17:37 (14) | 07:34 |
|                     | 22:02 | 27        | 20:46 (9) | 21:11 |            | 19:53      | 71         | 19:16 (13) | 18:33      | 22    | 17:59 (14) | 16:19 |
| 9                   | 04:35 | 20:19 (9) | 05:28     |       |            | 06:30      |            | 17:49 (12) | 07:30      |       | 17:37 (14) | 07:36 |
|                     | 22:01 | 28        | 20:47 (9) | 21:09 |            | 19:51      | 71         | 19:15 (13) | 18:30      | 21    | 17:58 (14) | 16:17 |
| 10                  | 04:36 | 20:18 (9) | 05:30     |       |            | 06:32      |            | 17:48 (12) | 07:32      |       | 17:38 (14) | 07:39 |
|                     | 22:00 | 29        | 20:47 (9) | 21:06 |            | 19:48      | 73         | 19:15 (13) | 18:28      | 21    | 17:59 (14) | 16:15 |
| 11                  | 04:37 | 20:19 (9) | 05:32     |       |            | 06:34      |            | 17:47 (12) | 07:34      |       | 17:37 (14) | 07:41 |
|                     | 21:59 | 29        | 20:48 (9) | 21:04 |            | 19:45      | 71         | 19:13 (13) | 18:25      | 19    | 17:56 (14) | 16:13 |
| 12                  | 04:39 | 20:19 (9) | 05:34     |       |            | 06:36      |            | 17:46 (12) | 07:36      |       | 17:38 (14) | 07:43 |
|                     | 21:58 | 30        | 20:49 (9) | 21:02 |            | 19:43      | 71         | 19:12 (13) | 18:22      | 15    | 17:53 (14) | 16:11 |
| 13                  | 04:40 | 20:18 (9) | 05:36     |       |            | 06:38      |            | 17:45 (12) | 07:38      |       | 17:38 (14) | 07:45 |
|                     | 21:57 | 31        | 20:49 (9) | 20:59 |            | 19:40      | 70         | 19:11 (13) | 18:20      | 13    | 17:51 (14) | 16:09 |
| 14                  | 04:41 | 20:18 (9) | 05:38     |       |            | 06:40      |            | 17:44 (12) | 07:41      |       | 17:39 (14) | 07:47 |
|                     | 21:55 | 31        | 20:49 (9) | 20:57 |            | 19:37      | 67         | 19:09 (13) | 18:17      | 9     | 17:48 (14) | 16:07 |
| 15                  | 04:43 | 20:18 (9) | 05:40     |       |            | 06:42      |            | 17:44 (12) | 07:43      |       | 17:41 (14) | 07:49 |
|                     | 21:54 | 32        | 20:50 (9) | 20:55 |            | 19:35      | 63         | 19:06 (13) | 18:15      | 5     | 17:46 (14) | 16:05 |
| 16                  | 04:44 | 20:18 (9) | 05:42     |       |            | 06:44      |            | 17:43 (12) | 07:45      |       | 07:51      | 08:42 |
|                     | 21:53 | 32        | 20:50 (9) | 20:52 |            | 19:32      | 56         | 19:02 (13) | 18:12      |       | 16:03      | 15:35 |
| 17                  | 04:46 | 20:17 (9) | 05:44     |       |            | 06:46      |            | 17:43 (12) | 07:47      |       | 07:54      | 08:42 |
|                     | 21:51 | 33        | 20:50 (9) | 20:50 |            | 19:29      | 47         | 18:30 (12) | 18:10      |       | 16:02      | 15:35 |
| 18                  | 04:47 | 20:18 (9) | 05:46     |       |            | 06:48      |            | 17:43 (12) | 07:49      |       | 07:56      | 08:43 |
|                     | 21:50 | 33        | 20:51 (9) | 20:47 |            | 19:26      | 47         | 18:30 (12) | 18:07      |       | 16:00      | 15:35 |
| 19                  | 04:49 | 20:17 (9) | 05:48     |       |            | 06:50      |            | 17:42 (12) | 07:51      |       | 07:58      | 08:44 |
|                     | 21:49 | 34        | 20:51 (9) | 20:45 |            | 19:24      | 47         | 18:29 (12) | 18:05      |       | 15:58      | 15:35 |
| 20                  | 04:51 | 20:18 (9) | 05:50     |       |            | 06:52      |            | 17:42 (12) | 07:53      |       | 08:00      | 08:45 |
|                     | 21:47 | 33        | 20:51 (9) | 20:42 |            | 19:21      | 47         | 18:29 (12) | 18:02      |       | 15:57      | 15:35 |
| 21                  | 04:52 | 20:17 (9) | 05:52     |       |            | 06:54      |            | 17:42 (12) | 07:55      |       | 08:02      | 08:45 |
|                     | 21:46 | 34        | 20:51 (9) | 20:40 |            | 19:18      | 46         | 18:28 (12) | 18:00      |       | 15:55      | 15:36 |
| 22                  | 04:54 | 20:18 (9) | 05:54     |       |            | 06:56      |            | 17:42 (12) | 07:58      |       | 08:04      | 08:46 |
|                     | 21:44 | 33        | 20:51 (9) | 20:38 |            | 19:16      | 44         | 18:26 (12) | 17:57      |       | 15:54      | 15:36 |
| 23                  | 04:56 | 20:17 (9) | 05:56     |       |            | 06:58      |            | 17:42 (12) | 08:00      |       | 08:06      | 08:47 |
|                     | 21:42 | 34        | 20:51 (9) | 20:35 |            | 19:13      | 43         | 18:25 (12) | 17:55      |       | 15:52      | 15:37 |
| 24                  | 04:58 | 20:18 (9) | 05:58     |       |            | 07:00      |            | 17:42 (12) | 08:02      |       | 08:08      | 08:47 |
|                     | 21:41 | 33        | 20:51 (9) | 20:32 |            | 19:10      | 42         | 18:24 (12) | 17:52      |       | 15:51      | 15:37 |
| 25                  | 04:59 | 20:18 (9) | 06:00     |       |            | 07:02      |            | 17:43 (12) | 08:04      |       | 08:10      | 08:47 |
|                     | 21:39 | 34        | 20:52 (9) | 20:30 |            | 19:08      | 39         | 18:22 (12) | 17:50      |       | 15:49      | 15:38 |
| 26                  | 05:01 | 20:18 (9) | 06:02     |       |            | 07:04      |            | 17:44 (12) | 07:06      |       | 08:12      | 08:48 |
|                     | 21:37 | 33        | 20:51 (9) | 20:27 |            | 19:05      | 37         | 18:21 (12) | 16:48      |       | 15:48      | 15:39 |
| 27                  | 05:03 | 20:18 (9) | 06:04     |       | 18:58 (13) | 07:06      |            | 17:46 (12) | 07:08      |       | 08:14      | 08:48 |
|                     | 21:35 | 33        | 20:51 (9) | 20:25 | 13         | 19:11 (13) | 19:02      | 34         | 18:20 (12) | 16:45 | 15:47      | 15:40 |
| 28                  | 05:05 | 20:19 (9) | 06:06     |       | 18:56 (13) | 07:08      |            | 17:47 (12) | 07:10      |       | 08:15      | 08:48 |
|                     | 21:33 | 32        | 20:51 (9) | 20:22 | 17         | 19:13 (13) | 18:59      | 31         | 18:18 (12) | 16:43 | 15:46      | 15:40 |
| 29                  | 05:07 | 20:19 (9) | 06:08     |       | 18:53 (13) | 07:10      |            | 17:49 (12) | 07:13      |       | 08:17      | 08:48 |
|                     | 21:32 | 31        | 20:50 (9) | 20:20 | 22         | 19:15 (13) | 18:57      | 27         | 18:16 (12) | 16:41 | 15:44      | 15:41 |
| 30                  | 05:08 | 20:19 (9) | 06:10     |       | 18:52 (13) | 07:12      |            | 17:51 (12) | 07:15      |       | 08:19      | 08:48 |
|                     | 21:30 | 31        | 20:50 (9) | 20:17 | 24         | 19:16 (13) | 18:54      | 22         | 18:13 (12) | 16:38 | 15:43      | 15:42 |
| 31                  | 05:10 | 20:20 (9) | 06:12     |       | 18:50 (13) |            |            | 07:17      |            |       | 08:48      |       |
|                     | 21:28 | 30        | 20:50 (9) | 20:14 | 27         | 19:17 (13) |            | 16:36      |            |       | 15:43      |       |
| Potential sun hours | 530   |           | 470       |       |            | 385        |            | 324        |            | 248   | 216        |       |
| Total, worst case   |       | 931       |           | 255   |            | 1562       |            | 223        |            |       |            |       |
| Sun reduction       |       | 0,51      |           | 0,51  |            | 0,43       |            | 0,27       |            |       |            |       |
| Oper. time red.     |       | 0,94      |           | 0,94  |            | 0,94       |            | 0,94       |            |       |            |       |
| Wind dir. red.      |       | 0,62      |           | 0,63  |            | 0,66       |            | 0,66       |            |       |            |       |
| Total reduction     |       | 0,30      |           | 0,31  |            | 0,27       |            | 0,17       |            |       |            |       |
| Total, real         |       | 275       |           | 78    |            | 415        |            | 38         |            |       |            |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CP - Gruguli

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:52 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:25<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:07 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:19 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:04 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:50 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:42<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:23<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CQ - Aramsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:22<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:42<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:53<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:29 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:23<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:43<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:41 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:12<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:36<br>21:46 | 04:26<br>22:07 | 05:08<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CR - Alksni š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:08 | 06:46 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 20:52 | 21:49 | 22:06 | 21:25  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:51 | 20:54 | 21:51 | 22:06 | 21:23  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:06     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:38 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:25    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:46   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:50    | 17:52 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:30 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:35   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:50 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:18    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:12    | 15:35    |
| 12                  | 08:42   | 07:49    | 06:40 | 06:17 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:07 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:42     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:08    | 18:10 | 20:14 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:40   | 07:47    | 08:39    |
|                     | 16:04   | 17:11    | 18:12 | 20:16 | 21:18 | 22:04 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:06   | 17:13    | 18:14 | 20:18 | 21:20 | 22:04 | 21:54 | 20:54  | 19:34     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:26    | 18:26 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:23    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:46    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:37 | 21:37 | 22:08 | 21:40 | 20:32  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:26   | 17:35    | 18:35 | 20:39 | 21:38 | 22:08 | 21:39 | 20:30  | 19:07     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:02 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:41 | 21:40 | 22:07 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:13    | 08:48    |
|                     | 16:31   | 17:39    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:54 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:12   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:46 | 22:07 | 21:29 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:27 | 20:14  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CS - Lejsalie š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:33 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:52 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:20 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:25<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:07 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:10 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:02 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:19 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:04 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:23<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:50 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:42<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:02<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:23<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:38 |
| 27                  | 08:21<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:39<br>20:44 | 04:39<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:24<br>22:07 | 05:04<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CT - Araj

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April                       | May                      | June           |
|---------------------|----------------|----------------|----------------|-----------------------------|--------------------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:49              | 18:47 (12)<br>19:17 (12) | 05:30<br>20:52 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52              | 18:46 (12)<br>19:17 (12) | 05:28<br>20:54 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54              | 18:46 (12)<br>19:28 (13) | 05:26<br>20:56 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:48 | 07:01<br>17:50 | 06:39<br>19:56              | 18:45 (12)<br>19:29 (13) | 05:23<br>20:58 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:53 | 06:36<br>19:58              | 18:44 (12)<br>19:31 (13) | 05:21<br>21:00 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00              | 18:44 (12)<br>19:34 (13) | 05:19<br>21:02 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02              | 18:44 (12)<br>19:35 (13) | 05:17<br>21:04 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04              | 18:45 (12)<br>19:38 (13) | 05:14<br>21:06 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06              | 18:44 (12)<br>19:38 (13) | 05:12<br>21:08 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08              | 18:45 (12)<br>19:39 (13) | 05:10<br>21:10 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10              | 18:45 (12)<br>19:38 (13) | 05:08<br>21:12 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:17<br>20:12              | 18:46 (12)<br>19:37 (13) | 05:06<br>21:14 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14              | 18:47 (12)<br>19:37 (13) | 05:04<br>21:16 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17              | 18:48 (12)<br>19:36 (13) | 05:02<br>21:18 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19              | 18:51 (12)<br>19:35 (13) | 05:00<br>21:20 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21              | 18:54 (12)<br>19:33 (13) | 04:58<br>21:22 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:05<br>20:23              | 19:17 (13)<br>19:32 (13) | 04:56<br>21:24 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25              | 19:18 (13)<br>19:29 (13) | 04:54<br>21:26 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27              | 21:28                    | 22:06          |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29              | 04:51<br>21:30           | 22:07          |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:27 | 05:54<br>20:31              | 04:49<br>21:31           | 22:07          |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33              | 04:47<br>21:33           | 22:07          |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35              | 04:46<br>21:35           | 22:08          |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37              | 04:44<br>21:37           | 22:08          |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39              | 04:43<br>21:38           | 22:08          |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42              | 04:41<br>21:40           | 22:08          |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44              | 04:40<br>21:42           | 22:07          |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46              | 04:38<br>21:43           | 22:07          |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48              | 04:37<br>21:45           | 22:07          |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:33<br>20:50              | 04:36<br>21:46           | 22:07          |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 | 28 18:49 (12)<br>19:17 (12) | 04:34<br>21:48           |                |
| Potential sun hours | 235            | 265            | 365            | 425                         | 507                      | 529            |
| Total, worst case   |                |                | 120            | 718                         | 438                      |                |
| Sun reduction       |                |                | 0,39           | 0,48                        | 0,53                     |                |
| Oper. time red.     |                |                | 0,94           | 0,94                        | 0,94                     |                |
| Wind dir. red.      |                |                | 0,66           | 0,65                        | 0,62                     |                |
| Total reduction     |                |                | 0,24           | 0,29                        | 0,31                     |                |
| Total, real         |                |                | 29             | 211                         | 136                      |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CT - Araj

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | July  | August    | September    | October       | November      | December |
|---------------------|-------|-----------|--------------|---------------|---------------|----------|
| 1                   | 04:27 | 05:12     | 20:22 (9)    | 06:14         | 18:45 (12)    | 07:14    |
|                     | 22:06 | 21:26     | 25 20:47 (9) | 20:12         | 51 19:37 (13) | 18:51    |
| 2                   | 04:28 | 05:14     | 20:23 (9)    | 06:16         | 18:44 (12)    | 07:16    |
|                     | 22:06 | 21:24     | 24 20:47 (9) | 20:09         | 53 19:37 (13) | 18:49    |
| 3                   | 04:28 | 05:16     | 20:23 (9)    | 06:18         | 18:43 (12)    | 07:18    |
|                     | 22:05 | 21:21     | 24 20:47 (9) | 20:07         | 54 19:37 (13) | 18:46    |
| 4                   | 04:29 | 05:18     | 20:23 (9)    | 06:20         | 18:42 (12)    | 07:20    |
|                     | 22:05 | 21:19     | 24 20:47 (9) | 20:04         | 54 19:36 (13) | 18:43    |
| 5                   | 04:30 | 05:20     | 20:23 (9)    | 06:22         | 18:40 (12)    | 07:22    |
|                     | 22:04 | 21:17     | 22 20:45 (9) | 20:01         | 53 19:33 (13) | 18:41    |
| 6                   | 04:31 | 05:22     | 20:23 (9)    | 06:24         | 18:40 (12)    | 07:24    |
|                     | 22:03 | 21:15     | 21 20:44 (9) | 19:59         | 50 19:30 (13) | 18:38    |
| 7                   | 04:32 | 05:24     | 20:24 (9)    | 06:26         | 18:40 (12)    | 07:26    |
|                     | 22:03 | 21:13     | 18 20:42 (9) | 19:56         | 46 19:28 (13) | 18:36    |
| 8                   | 04:34 | 05:26     | 20:25 (9)    | 06:28         | 18:39 (12)    | 07:28    |
|                     | 22:02 | 21:11     | 15 20:40 (9) | 19:53         | 43 19:25 (13) | 18:33    |
| 9                   | 04:35 | 05:28     | 20:26 (9)    | 06:30         | 18:39 (12)    | 07:30    |
|                     | 22:01 | 21:08     | 12 20:38 (9) | 19:51         | 39 19:23 (13) | 18:30    |
| 10                  | 04:36 | 05:30     | 20:28 (9)    | 06:32         | 18:39 (12)    | 07:32    |
|                     | 22:00 | 21:06     | 8 20:36 (9)  | 19:48         | 32 19:11 (12) | 18:28    |
| 11                  | 04:37 | 05:32     | 20:29 (9)    | 06:34         | 18:39 (12)    | 07:34    |
|                     | 21:59 | 21:04     | 4 20:33 (9)  | 19:45         | 31 19:10 (12) | 18:25    |
| 12                  | 04:39 | 05:34     |              | 06:36         | 18:40 (12)    | 07:36    |
|                     | 21:58 | 21:02     |              | 19:43         | 29 19:09 (12) | 18:22    |
| 13                  | 04:40 | 05:36     |              | 06:38         | 18:40 (12)    | 07:38    |
|                     | 21:57 | 20:59     |              | 19:40         | 28 19:08 (12) | 18:20    |
| 14                  | 04:41 | 05:38     |              | 06:40         | 18:41 (12)    | 07:41    |
|                     | 21:55 | 20:57     |              | 19:37         | 26 19:07 (12) | 18:17    |
| 15                  | 04:43 | 05:40     |              | 06:42         | 18:42 (12)    | 07:43    |
|                     | 21:54 | 20:55     |              | 19:35         | 23 19:05 (12) | 18:15    |
| 16                  | 04:44 | 05:42     |              | 06:44         | 18:44 (12)    | 07:45    |
|                     | 21:53 | 20:52     |              | 19:32         | 19 19:03 (12) | 18:12    |
| 17                  | 04:46 | 05:44     |              | 06:46         | 18:46 (12)    | 07:47    |
|                     | 21:51 | 20:50     |              | 19:29         | 14 19:00 (12) | 18:10    |
| 18                  | 04:47 | 05:46     |              | 06:48         |               | 07:49    |
|                     | 21:50 | 20:47     |              | 19:26         |               | 18:07    |
| 19                  | 04:49 | 20:31 (9) | 05:48        | 06:50         |               | 07:51    |
|                     | 21:49 | 20:38 (9) | 20:45        | 19:24         |               | 18:05    |
| 20                  | 04:51 | 20:30 (9) | 05:50        | 06:52         |               | 07:53    |
|                     | 21:47 | 20:41 (9) | 20:42        | 19:21         |               | 18:02    |
| 21                  | 04:52 | 20:28 (9) | 05:52        | 06:54         |               | 07:55    |
|                     | 21:46 | 20:42 (9) | 20:40        | 19:18         |               | 18:00    |
| 22                  | 04:54 | 20:27 (9) | 05:54        | 06:56         |               | 07:57    |
|                     | 21:44 | 20:43 (9) | 20:37        | 19:16         |               | 17:57    |
| 23                  | 04:56 | 20:26 (9) | 05:56        | 06:58         |               | 08:00    |
|                     | 21:42 | 20:44 (9) | 20:35        | 19:13         |               | 17:55    |
| 24                  | 04:57 | 20:26 (9) | 05:58        | 07:00         |               | 08:02    |
|                     | 21:41 | 20:45 (9) | 20:32        | 19:10         |               | 17:52    |
| 25                  | 04:59 | 20:25 (9) | 06:00        | 07:02         |               | 08:04    |
|                     | 21:39 | 20:46 (9) | 20:30        | 8 19:32 (13)  |               | 17:50    |
| 26                  | 05:01 | 20:24 (9) | 06:02        | 19:20 (13)    |               | 07:04    |
|                     | 21:37 | 20:46 (9) | 20:27        | 13 19:33 (13) |               | 19:05    |
| 27                  | 05:03 | 20:24 (9) | 06:04        | 19:18 (13)    |               | 07:06    |
|                     | 21:35 | 20:47 (9) | 20:25        | 17 19:35 (13) |               | 19:02    |
| 28                  | 05:05 | 20:24 (9) | 06:06        | 18:53 (12)    |               | 07:08    |
|                     | 21:33 | 20:47 (9) | 20:22        | 32 19:36 (13) |               | 18:59    |
| 29                  | 05:07 | 20:23 (9) | 06:08        | 18:50 (12)    |               | 07:10    |
|                     | 21:31 | 20:47 (9) | 20:20        | 40 19:37 (13) |               | 18:57    |
| 30                  | 05:08 | 20:23 (9) | 06:10        | 18:48 (12)    |               | 07:12    |
|                     | 21:30 | 20:47 (9) | 20:17        | 44 19:37 (13) |               | 18:54    |
| 31                  | 05:10 | 20:23 (9) | 06:12        | 18:47 (12)    |               | 07:17    |
|                     | 21:28 | 20:48 (9) | 20:14        | 47 19:37 (13) |               | 16:36    |
| Potential sun hours | 530   |           | 470          | 385           |               | 324      |
| Total, worst case   |       |           |              |               |               | 248      |
| Sun reduction       | 247   |           | 398          | 645           |               | 216      |
| Oper. time red.     | 0,51  |           | 0,51         | 0,43          |               |          |
| Wind dir. red.      | 0,94  |           | 0,94         | 0,94          |               |          |
| Total reduction     | 0,62  |           | 0,64         | 0,65          |               |          |
| Total, real         | 0,30  |           | 0,31         | 0,26          |               |          |
|                     | 73    |           | 122          | 170           |               |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CU - Plavinas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:08 | 06:46 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:51 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:38 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:50    | 17:52 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:30 | 05:16 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:35   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:50 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:18    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:25 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:12    | 15:35    |
| 12                  | 08:42   | 07:49    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:07 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:08    | 18:10 | 20:14 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:40   | 07:47    | 08:39    |
|                     | 16:04   | 17:11    | 18:12 | 20:16 | 21:18 | 22:04 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:34     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:51    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:42    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:51 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:19    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:49 | 20:45  | 19:24     | 18:04   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:50 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:30 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:56    | 15:35    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:26    | 18:26 | 20:31 | 21:31 | 22:07 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:37 | 21:37 | 22:08 | 21:41 | 20:32  | 19:10     | 17:52   | 15:50    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:26   | 17:35    | 18:35 | 20:39 | 21:38 | 22:08 | 21:39 | 20:30  | 19:07     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:23 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:38    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:39 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:30   | 17:39    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:54 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:46 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:28 | 20:14  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CV - Zališi

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:08 | 06:46 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:51   | 16:33    | 15:42    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:51 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:38 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:50    | 17:52 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:30 | 05:16 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:35   | 16:20    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:50 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:18    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:25 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:12    | 15:35    |
| 12                  | 08:42   | 07:49    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:07 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:10    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:08    | 18:10 | 20:14 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:40   | 07:47    | 08:39    |
|                     | 16:04   | 17:11    | 18:12 | 20:16 | 21:18 | 22:04 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:34     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:42    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:51 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:19    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:49 | 20:45  | 19:24     | 18:04   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:50 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:30 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:56    | 15:35    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:26    | 18:26 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:23    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:37 | 21:37 | 22:08 | 21:41 | 20:32  | 19:10     | 17:52   | 15:50    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:26   | 17:35    | 18:35 | 20:39 | 21:38 | 22:08 | 21:39 | 20:30  | 19:07     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:02 | 05:42 | 04:41 | 04:23 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:38    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:39 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:30   | 17:39    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:54 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:12   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:46 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:28 | 20:14  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CW - Grugules

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:52 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:07 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:42<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:19 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:42<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CX - Madaras

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:52 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:25<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:07 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:19 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:04 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:23<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:50 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:42<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:23<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:38 |
| 27                  | 08:21<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CY - Vu š karnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     |    | January | February | March |    | April      |       | May        |            | June       |
|---------------------|----|---------|----------|-------|----|------------|-------|------------|------------|------------|
|                     | 1  | 08:48   | 08:12    | 07:09 |    | 17:12 (12) | 06:47 | 05:30      | 19:44 (11) | 04:33      |
|                     |    | 15:45   | 16:42    | 17:44 | 5  | 17:17 (12) | 19:49 | 20:52      | 20:13 (11) | 21:49      |
|                     | 2  | 08:48   | 08:10    | 07:06 |    | 17:10 (12) | 06:44 | 05:28      | 19:44 (11) | 04:32      |
|                     |    | 15:46   | 16:44    | 17:46 | 10 | 17:20 (12) | 19:52 | 20:54      | 20:24 (10) | 21:51      |
|                     | 3  | 08:47   | 08:08    | 07:03 |    | 17:08 (12) | 06:41 | 05:26      | 19:44 (11) | 04:31      |
|                     |    | 15:47   | 16:46    | 17:48 | 14 | 17:22 (12) | 19:54 | 20:56      | 20:26 (10) | 21:52      |
|                     | 4  | 08:47   | 08:06    | 07:01 |    | 17:06 (12) | 06:39 | 05:23      | 19:44 (11) | 04:30      |
|                     |    | 15:48   | 16:48    | 17:50 | 18 | 17:24 (12) | 19:56 | 20:58      | 20:28 (10) | 21:53      |
|                     | 5  | 08:47   | 08:04    | 06:58 |    | 17:06 (12) | 06:36 | 05:21      | 19:45 (11) | 04:29      |
|                     |    | 15:50   | 16:50    | 17:53 | 21 | 17:27 (12) | 19:58 | 21:00      | 20:30 (10) | 21:55      |
|                     | 6  | 08:46   | 08:02    | 06:56 |    | 17:05 (12) | 06:33 | 05:19      | 19:45 (11) | 04:28      |
|                     |    | 15:51   | 16:53    | 17:55 | 23 | 17:28 (12) | 20:00 | 21:02      | 20:32 (10) | 21:56      |
|                     | 7  | 08:45   | 08:00    | 06:53 |    | 17:04 (12) | 06:31 | 05:17      | 19:46 (11) | 04:27      |
|                     |    | 15:53   | 16:55    | 17:57 | 24 | 17:28 (12) | 20:02 | 21:04      | 20:34 (10) | 21:57      |
|                     | 8  | 08:45   | 07:58    | 06:50 |    | 17:05 (12) | 06:28 | 05:14      | 19:46 (11) | 04:26      |
|                     |    | 15:54   | 16:57    | 17:59 | 23 | 17:28 (12) | 20:04 | 21:06      | 20:36 (10) | 21:58      |
|                     | 9  | 08:44   | 07:56    | 06:48 |    | 17:04 (12) | 06:25 | 05:12      | 19:47 (11) | 04:26      |
|                     |    | 15:56   | 16:59    | 18:01 | 23 | 17:27 (12) | 20:06 | 21:08      | 20:37 (10) | 21:59      |
|                     | 10 | 08:43   | 07:54    | 06:45 |    | 17:04 (12) | 06:23 | 05:10      | 19:48 (11) | 04:25      |
|                     |    | 15:58   | 17:02    | 18:03 | 22 | 17:26 (12) | 20:08 | 21:10      | 20:37 (10) | 22:00      |
|                     | 11 | 08:43   | 07:52    | 06:43 |    | 17:05 (12) | 06:20 | 05:08      | 19:49 (11) | 04:24      |
|                     |    | 15:59   | 17:04    | 18:05 | 21 | 17:26 (12) | 20:10 | 21:12      | 20:37 (10) | 22:01      |
|                     | 12 | 08:42   | 07:49    | 06:40 |    | 17:06 (12) | 06:17 | 05:06      | 19:50 (11) | 04:24      |
|                     |    | 16:01   | 17:06    | 18:08 | 19 | 17:25 (12) | 20:12 | 21:14      | 20:37 (10) | 22:02      |
|                     | 13 | 08:41   | 07:47    | 06:37 |    | 17:07 (12) | 06:15 | 05:04      | 19:52 (11) | 04:23      |
|                     |    | 16:03   | 17:08    | 18:10 | 16 | 17:23 (12) | 20:14 | 21:16      | 20:36 (10) | 22:03      |
|                     | 14 | 08:40   | 07:45    | 06:35 |    | 17:08 (12) | 06:12 | 05:02      | 19:55 (11) | 04:23      |
|                     |    | 16:04   | 17:11    | 18:12 | 12 | 17:20 (12) | 20:17 | 21:18      | 20:37 (10) | 22:04      |
|                     | 15 | 08:39   | 07:43    | 06:32 |    |            | 06:10 | 05:00      | 20:16 (10) | 04:23      |
|                     |    | 16:06   | 17:13    | 18:14 |    |            | 20:19 | 21:20      | 20:36 (10) | 22:04      |
|                     | 16 | 08:37   | 07:40    | 06:29 |    |            | 06:07 | 04:58      | 20:16 (10) | 04:22      |
|                     |    | 16:08   | 17:15    | 18:16 |    |            | 20:21 | 21:22      | 20:35 (10) | 22:05      |
|                     | 17 | 08:36   | 07:38    | 06:27 |    |            | 06:05 | 04:56      | 20:16 (10) | 04:22      |
|                     |    | 16:10   | 17:17    | 18:18 |    |            | 20:23 | 21:24      | 20:34 (10) | 22:06      |
|                     | 18 | 08:35   | 07:36    | 06:24 |    |            | 06:02 | 04:54      | 20:18 (10) | 04:22      |
|                     |    | 16:12   | 17:20    | 18:20 |    |            | 20:25 | 21:26      | 20:34 (10) | 22:06      |
|                     | 19 | 08:34   | 07:33    | 06:21 |    |            | 05:59 | 04:53      | 20:18 (10) | 04:22      |
|                     |    | 16:14   | 17:22    | 18:22 |    |            | 20:27 | 21:28      | 20:33 (10) | 22:06      |
|                     | 20 | 08:32   | 07:31    | 06:19 |    |            | 05:57 | 04:51      | 20:20 (10) | 04:22      |
|                     |    | 16:16   | 17:24    | 18:24 |    |            | 20:29 | 21:30      | 20:32 (10) | 22:07      |
|                     | 21 | 08:31   | 07:28    | 06:16 |    |            | 05:54 | 19:58 (11) | 04:49      | 20:22 (10) |
|                     |    | 16:18   | 17:26    | 18:27 |    |            | 20:31 | 5          | 20:03 (11) | 21:31      |
|                     | 22 | 08:29   | 07:26    | 06:13 |    |            | 05:52 | 19:54 (11) | 04:47      | 8          |
|                     |    | 16:20   | 17:28    | 18:29 |    |            | 20:33 | 11         | 20:05 (11) | 21:33      |
|                     | 23 | 08:28   | 07:24    | 06:11 |    |            | 05:49 | 19:51 (11) | 04:46      | 1          |
|                     |    | 16:22   | 17:31    | 18:31 |    |            | 20:35 | 16         | 20:07 (11) | 21:35      |
|                     | 24 | 08:26   | 07:21    | 06:08 |    |            | 05:47 | 19:50 (11) | 04:44      |            |
|                     |    | 16:24   | 17:33    | 18:33 |    |            | 20:37 | 19         | 20:09 (11) | 21:37      |
|                     | 25 | 08:25   | 07:19    | 06:05 |    |            | 05:44 | 19:49 (11) | 04:43      |            |
|                     |    | 16:26   | 17:35    | 18:35 |    |            | 20:39 | 22         | 20:11 (11) | 21:38      |
|                     | 26 | 08:23   | 07:16    | 06:03 |    |            | 05:42 | 19:47 (11) | 04:41      |            |
|                     |    | 16:28   | 17:37    | 18:37 |    |            | 20:42 | 25         | 20:12 (11) | 21:40      |
|                     | 27 | 08:21   | 07:14    | 06:00 |    |            | 05:40 | 19:46 (11) | 04:40      |            |
|                     |    | 16:31   | 17:40    | 18:39 |    |            | 20:44 | 26         | 20:12 (11) | 21:42      |
|                     | 28 | 08:20   | 07:11    | 05:57 |    |            | 05:37 | 19:46 (11) | 04:38      |            |
|                     |    | 16:33   | 17:42    | 18:41 |    |            | 20:46 | 27         | 20:13 (11) | 21:43      |
|                     | 29 | 08:18   |          | 05:55 |    |            | 05:35 | 19:45 (11) | 04:37      |            |
|                     |    | 16:35   |          | 18:43 |    |            | 20:48 | 28         | 20:13 (11) | 21:45      |
|                     | 30 | 08:16   |          | 06:52 |    |            | 05:32 | 19:44 (11) | 04:36      |            |
|                     |    | 16:37   |          | 19:45 |    |            | 20:50 | 29         | 20:13 (11) | 21:46      |
|                     | 31 | 08:14   |          | 06:49 |    |            |       |            | 04:34      |            |
|                     |    | 16:39   |          | 19:47 |    |            |       |            | 21:48      |            |
| Potential sun hours |    | 235     | 265      | 365   |    | 425        |       | 507        |            | 529        |
| Total, worst case   |    |         |          | 251   |    | 208        |       | 643        |            |            |
| Sun reduction       |    |         |          | 0,39  |    | 0,48       |       | 0,53       |            |            |
| Oper. time red.     |    |         |          | 0,94  |    | 0,94       |       | 0,94       |            |            |
| Wind dir. red.      |    |         |          | 0,66  |    | 0,62       |       | 0,62       |            |            |
| Total reduction     |    |         |          | 0,24  |    | 0,28       |       | 0,31       |            |            |
| Total, real         |    |         |          | 61    |    | 58         |       | 199        |            |            |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CY - Vu š karnieki

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

| July                |       | August        |               | September |               | October |               | November |       | December |     |
|---------------------|-------|---------------|---------------|-----------|---------------|---------|---------------|----------|-------|----------|-----|
| 1                   | 04:27 | 05:12         | 20:00 (11)    | 06:14     |               | 07:14   | 17:47 (12)    | 07:19    | 08:21 |          |     |
|                     | 22:06 | 21:26         | 38 20:47 (10) | 20:12     |               | 18:51   | 16 18:03 (12) | 16:34    | 15:42 |          |     |
| 2                   | 04:28 | 05:14         | 19:59 (11)    | 06:16     |               | 07:16   | 17:45 (12)    | 07:21    | 08:23 |          |     |
|                     | 22:06 | 21:24         | 41 20:47 (10) | 20:09     |               | 18:49   | 19 18:04 (12) | 16:31    | 15:41 |          |     |
| 3                   | 04:28 | 05:16         | 19:58 (11)    | 06:18     |               | 07:18   | 17:43 (12)    | 07:23    | 08:24 |          |     |
|                     | 22:05 | 21:21         | 44 20:48 (10) | 20:07     |               | 18:46   | 21 18:04 (12) | 16:29    | 15:40 |          |     |
| 4                   | 04:29 | 05:18         | 19:57 (11)    | 06:20     |               | 07:20   | 17:42 (12)    | 07:26    | 08:26 |          |     |
|                     | 22:05 | 21:19         | 46 20:48 (10) | 20:04     |               | 18:43   | 22 18:04 (12) | 16:27    | 15:40 |          |     |
| 5                   | 04:30 | 05:20         | 19:56 (11)    | 06:22     |               | 07:22   | 17:41 (12)    | 07:28    | 08:27 |          |     |
|                     | 22:04 | 21:17         | 44 20:45 (10) | 20:01     |               | 18:41   | 23 18:04 (12) | 16:25    | 15:39 |          |     |
| 6                   | 04:31 | 05:22         | 19:55 (11)    | 06:24     |               | 07:24   | 17:41 (12)    | 07:30    | 08:29 |          |     |
|                     | 22:03 | 21:15         | 45 20:44 (10) | 19:59     |               | 18:38   | 23 18:04 (12) | 16:23    | 15:38 |          |     |
| 7                   | 04:32 | 05:24         | 19:55 (11)    | 06:26     |               | 07:26   | 17:40 (12)    | 07:32    | 08:30 |          |     |
|                     | 22:03 | 21:13         | 42 20:42 (10) | 19:56     |               | 18:35   | 24 18:04 (12) | 16:21    | 15:37 |          |     |
| 8                   | 04:34 | 05:26         | 19:54 (11)    | 06:28     |               | 07:28   | 17:40 (12)    | 07:34    | 08:32 |          |     |
|                     | 22:02 | 21:11         | 41 20:40 (10) | 19:53     |               | 18:33   | 23 18:03 (12) | 16:19    | 15:37 |          |     |
| 9                   | 04:35 | 05:28         | 19:54 (11)    | 06:30     |               | 07:30   | 17:40 (12)    | 07:36    | 08:33 |          |     |
|                     | 22:01 | 21:08         | 39 20:38 (10) | 19:51     |               | 18:30   | 21 18:01 (12) | 16:17    | 15:36 |          |     |
| 10                  | 04:36 | 05:30         | 19:53 (11)    | 06:32     |               | 07:32   | 17:42 (12)    | 07:39    | 08:35 |          |     |
|                     | 22:00 | 21:06         | 35 20:35 (10) | 19:48     |               | 18:28   | 17 17:59 (12) | 16:15    | 15:36 |          |     |
| 11                  | 04:37 | 05:32         | 19:53 (11)    | 06:34     |               | 07:34   | 17:42 (12)    | 07:41    | 08:36 |          |     |
|                     | 21:59 | 21:04         | 33 20:33 (10) | 19:45     |               | 18:25   | 14 17:56 (12) | 16:13    | 15:35 |          |     |
| 12                  | 04:39 | 05:34         | 19:53 (11)    | 06:36     |               | 07:36   | 17:43 (12)    | 07:43    | 08:37 |          |     |
|                     | 21:58 | 21:02         | 29 20:22 (11) | 19:43     |               | 18:22   | 10 17:53 (12) | 16:11    | 15:35 |          |     |
| 13                  | 04:40 | 05:36         | 19:53 (11)    | 06:38     |               | 07:38   | 17:45 (12)    | 07:45    | 08:38 |          |     |
|                     | 21:57 | 20:59         | 28 20:21 (11) | 19:40     |               | 18:20   | 6 17:51 (12)  | 16:09    | 15:35 |          |     |
| 14                  | 04:41 | 05:38         | 19:53 (11)    | 06:40     |               | 07:41   |               | 07:47    | 08:39 |          |     |
|                     | 21:55 | 20:57         | 28 20:21 (11) | 19:37     |               | 18:17   |               | 16:07    | 15:35 |          |     |
| 15                  | 04:43 | 05:40         | 19:53 (11)    | 06:42     |               | 07:43   |               | 07:49    | 08:41 |          |     |
|                     | 21:54 | 20:55         | 28 20:21 (11) | 19:35     |               | 18:15   |               | 16:05    | 15:35 |          |     |
| 16                  | 04:44 | 05:42         | 19:54 (11)    | 06:44     |               | 07:45   |               | 07:51    | 08:42 |          |     |
|                     | 21:53 | 20:52         | 26 20:20 (11) | 19:32     |               | 18:12   |               | 16:03    | 15:35 |          |     |
| 17                  | 04:46 | 05:44         | 19:53 (11)    | 06:46     |               | 07:47   |               | 07:54    | 08:42 |          |     |
|                     | 21:51 | 20:50         | 26 20:19 (11) | 19:29     |               | 18:10   |               | 16:02    | 15:35 |          |     |
| 18                  | 04:47 | 05:46         | 19:54 (11)    | 06:48     |               | 07:49   |               | 07:56    | 08:43 |          |     |
|                     | 21:50 | 20:47         | 24 20:18 (11) | 19:26     |               | 18:07   |               | 16:00    | 15:35 |          |     |
| 19                  | 04:49 | 05:48         | 19:55 (11)    | 06:50     |               | 07:51   |               | 07:58    | 08:44 |          |     |
|                     | 21:49 | 20:45         | 20 20:15 (11) | 19:24     |               | 18:05   |               | 15:58    | 15:35 |          |     |
| 20                  | 04:51 | 05:50         | 19:56 (11)    | 06:52     |               | 07:53   |               | 08:00    | 08:45 |          |     |
|                     | 21:47 | 20:42         | 17 20:13 (11) | 19:21     |               | 18:02   |               | 15:57    | 15:35 |          |     |
| 21                  | 04:52 | 05:52         | 19:58 (11)    | 06:54     |               | 07:55   |               | 08:02    | 08:45 |          |     |
|                     | 21:46 | 20:40         | 13 20:11 (11) | 19:18     |               | 18:00   |               | 15:55    | 15:36 |          |     |
| 22                  | 04:54 | 05:54         | 20:01 (11)    | 06:56     |               | 07:57   |               | 08:04    | 08:46 |          |     |
|                     | 21:44 | 20:37         | 8 20:09 (11)  | 19:16     |               | 17:57   |               | 15:54    | 15:36 |          |     |
| 23                  | 04:56 | 20:32 (10)    | 05:56         | 06:58     |               | 08:00   |               | 08:06    | 08:47 |          |     |
|                     | 21:42 | 8 20:40 (10)  | 20:35         | 19:13     |               | 17:55   |               | 15:52    | 15:37 |          |     |
| 24                  | 04:57 | 20:31 (10)    | 05:58         | 07:00     |               | 08:02   |               | 08:08    | 08:47 |          |     |
|                     | 21:41 | 11 20:42 (10) | 20:32         | 19:10     |               | 17:52   |               | 15:51    | 15:37 |          |     |
| 25                  | 04:59 | 20:30 (10)    | 06:00         | 07:02     |               | 08:04   |               | 08:10    | 08:47 |          |     |
|                     | 21:39 | 14 20:44 (10) | 20:30         | 19:08     |               | 17:50   |               | 15:49    | 15:38 |          |     |
| 26                  | 05:01 | 20:28 (10)    | 06:02         | 07:04     |               | 07:06   |               | 08:12    | 08:48 |          |     |
|                     | 21:37 | 16 20:44 (10) | 20:27         | 19:05     |               | 16:47   |               | 15:48    | 15:39 |          |     |
| 27                  | 05:03 | 20:28 (10)    | 06:04         | 07:06     |               | 07:08   |               | 08:14    | 08:48 |          |     |
|                     | 21:35 | 17 20:45 (10) | 20:25         | 19:02     |               | 16:45   |               | 15:47    | 15:39 |          |     |
| 28                  | 05:05 | 20:26 (10)    | 06:06         | 07:08     |               | 07:10   |               | 08:15    | 08:48 |          |     |
|                     | 21:33 | 19 20:45 (10) | 20:22         | 18:59     |               | 16:43   |               | 15:45    | 15:40 |          |     |
| 29                  | 05:06 | 20:26 (10)    | 06:08         | 07:10     |               | 07:13   |               | 08:17    | 08:48 |          |     |
|                     | 21:31 | 20 20:46 (10) | 20:20         | 18:57     | 3 17:54 (12)  | 16:40   |               | 15:44    | 15:41 |          |     |
| 30                  | 05:08 | 20:06 (11)    | 06:10         | 07:12     | 3 17:57 (12)  | 07:15   |               | 08:19    | 08:48 |          |     |
|                     | 21:30 | 26 20:47 (10) | 20:17         | 18:54     | 12 17:49 (12) | 16:38   |               | 15:43    | 15:42 |          |     |
| 31                  | 05:10 | 20:03 (11)    | 06:12         |           |               | 07:17   |               |          | 08:48 |          |     |
|                     | 21:28 | 34 20:48 (10) | 20:14         |           |               | 16:36   |               |          | 15:43 |          |     |
| Potential sun hours | 530   |               | 470           |           | 385           |         | 324           |          | 248   |          | 216 |
| Total, worst case   |       | 165           |               | 695       |               |         | 239           |          |       |          |     |
| Sun reduction       |       | 0,51          |               | 0,51      |               | 0,43    | 0,27          |          |       |          |     |
| Oper. time red.     |       | 0,94          |               | 0,94      |               | 0,94    | 0,94          |          |       |          |     |
| Wind dir. red.      |       | 0,62          |               | 0,62      |               | 0,66    | 0,66          |          |       |          |     |
| Total reduction     |       | 0,30          |               | 0,30      |               | 0,27    | 0,17          |          |       |          |     |
| Total, real         |       | 49            |               | 208       |               | 4       | 40            |          |       |          |     |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: CZ - Vecares

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:52 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:25<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:07 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:19 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:04 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:23<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:42<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:23<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:12<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DA - Strautmali

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:46 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:27 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                     | 15:46   | 16:44    | 17:46 | 19:51 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:38 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:47   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:50    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:35   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:50 | 06:28 | 05:14 | 04:26 | 04:33 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:18    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:12    | 15:35    |
| 12                  | 08:42   | 07:49    | 06:40 | 06:17 | 05:06 | 04:24 | 04:38 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:07 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:08    | 18:10 | 20:14 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:40   | 07:47    | 08:39    |
|                     | 16:04   | 17:11    | 18:12 | 20:16 | 21:18 | 22:04 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                     | 16:06   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:34     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:51    | 08:42    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:42    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:06 | 21:51 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:52 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:30 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:56    | 15:35    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:26    | 18:26 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:49 | 04:46 | 04:22 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:37 | 21:37 | 22:08 | 21:41 | 20:32  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:42 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:26   | 17:35    | 18:35 | 20:39 | 21:38 | 22:08 | 21:39 | 20:30  | 19:07     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:30   | 17:39    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:54 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:35 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:46 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:28 | 20:14  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DB - Jaunari

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:41 | 07:08<br>17:44 | 06:46<br>19:49 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:51 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:51 | 05:28<br>20:54 | 04:32<br>21:51 | 04:27<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:31 | 08:23<br>15:41 |
| 3                   | 08:47<br>15:47 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:25<br>20:56 | 04:31<br>21:52 | 04:28<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:29 | 08:24<br>15:40 |
| 4                   | 08:47<br>15:51 | 08:06<br>16:57 | 07:01<br>17:59 | 06:38<br>19:56 | 05:23<br>20:58 | 04:30<br>21:53 | 04:29<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:43 | 07:26<br>16:27 | 08:26<br>15:39 |
| 5                   | 08:47<br>15:50 | 08:04<br>16:50 | 06:58<br>17:52 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:51 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:31<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:30<br>20:02 | 05:16<br>21:04 | 04:27<br>21:57 | 04:32<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:35 | 07:32<br>16:21 | 08:30<br>15:37 |
| 8                   | 08:45<br>15:54 | 07:58<br>16:57 | 06:50<br>17:59 | 06:28<br>20:04 | 05:14<br>21:06 | 04:26<br>21:58 | 04:33<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:18 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>16:59 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:16 | 08:33<br>15:36 |
| 10                  | 08:43<br>15:57 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:14 | 08:35<br>15:36 |
| 11                  | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:05 | 06:20<br>20:10 | 05:08<br>21:12 | 04:24<br>22:01 | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:12 | 08:36<br>15:35 |
| 12                  | 08:42<br>16:01 | 07:49<br>17:06 | 06:40<br>18:07 | 06:17<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:38<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:22 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:08 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:23<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:04 | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:16 | 05:02<br>21:18 | 04:23<br>22:04 | 04:41<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:40<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:34 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                  | 08:37<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:22<br>22:05 | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:03 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:04<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:01 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:19 | 06:24<br>18:20 | 06:02<br>20:25 | 04:54<br>21:26 | 04:22<br>22:06 | 04:47<br>21:50 | 05:46<br>20:47 | 06:48<br>19:26 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 05:59<br>20:27 | 04:52<br>21:28 | 04:22<br>22:06 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:04 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:24 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:50<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:56 | 08:45<br>15:35 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:26 | 06:16<br>18:26 | 05:54<br>20:31 | 04:49<br>21:31 | 04:22<br>22:07 | 04:52<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:28 | 06:13<br>18:29 | 05:52<br>20:33 | 04:47<br>21:33 | 04:22<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:53 | 08:46<br>15:36 |
| 23                  | 08:28<br>16:22 | 07:23<br>17:31 | 06:11<br>18:31 | 05:49<br>20:35 | 04:46<br>21:35 | 04:22<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                  | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:44<br>21:37 | 04:23<br>22:08 | 04:57<br>21:41 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                  | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 05:44<br>20:39 | 04:42<br>21:38 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:07 | 08:04<br>17:50 | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:28 | 07:16<br>17:37 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:47 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:30 | 07:14<br>17:39 | 06:00<br>18:39 | 05:40<br>20:44 | 04:39<br>21:42 | 04:24<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:39 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>18:59 | 07:10<br>16:43 | 08:15<br>15:45 | 08:48<br>15:40 |
| 29                  | 08:18<br>16:35 |                | 05:54<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 | 05:06<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:12<br>16:40 | 08:17<br>15:44 | 08:48<br>15:41 |
| 30                  | 08:16<br>16:37 |                | 06:52<br>19:45 | 05:32<br>20:50 | 04:35<br>21:46 | 04:26<br>22:07 | 05:08<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                  | 08:14<br>16:39 |                | 06:49<br>19:47 |                | 04:34<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:43 |
| Potential sun hours | 235            | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DC - Vidsala

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:08 | 06:46 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:41    | 17:44 | 19:49 | 20:52 | 21:49 | 22:06 | 21:25  | 20:12     | 18:51   | 16:34    | 15:42    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:51 | 20:54 | 21:51 | 22:06 | 21:23  | 20:09     | 18:49   | 16:31    | 15:41    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:25 | 04:31 | 04:28 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:06     | 18:46   | 16:29    | 15:40    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:38 | 05:23 | 04:30 | 04:29 | 05:18  | 06:20     | 07:20   | 07:25    | 08:26    |
|                     | 15:48   | 16:48    | 17:50 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:43   | 16:27    | 15:39    |
| 5                   | 08:46   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:30 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:50    | 17:52 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:31 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:51   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:30 | 05:17 | 04:27 | 04:32 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:35   | 16:21    | 15:37    |
| 8                   | 08:45   | 07:58    | 06:50 | 06:28 | 05:14 | 04:26 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:54   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 16:59    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:16    | 15:36    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:38    | 08:35    |
|                     | 15:57   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:14    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:08 | 04:24 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 15:59   | 17:04    | 18:05 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:35    |
| 12                  | 08:41   | 07:49    | 06:40 | 06:17 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:07 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:42     | 18:22   | 16:11    | 15:35    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:23 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:08    | 18:10 | 20:14 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:39   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:41 | 05:38  | 06:40     | 07:40   | 07:47    | 08:39    |
|                     | 16:04   | 17:11    | 18:12 | 20:16 | 21:18 | 22:03 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:06   | 17:13    | 18:14 | 20:18 | 21:20 | 22:04 | 21:54 | 20:54  | 19:34     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:58 | 04:22 | 04:44 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:04 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:10   | 17:17    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:01    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:54 | 04:22 | 04:47 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:26     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 05:59 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:24 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:57    | 15:35    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:54 | 04:49 | 04:22 | 04:52 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:26    | 18:26 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:47 | 04:22 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:28    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:53    | 15:36    |
| 23                  | 08:28   | 07:23    | 06:11 | 05:49 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 07:59   | 08:06    | 08:46    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:57 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:24   | 17:33    | 18:33 | 20:37 | 21:37 | 22:07 | 21:40 | 20:32  | 19:10     | 17:52   | 15:51    | 15:37    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:44 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:26   | 17:35    | 18:35 | 20:39 | 21:38 | 22:07 | 21:39 | 20:30  | 19:07     | 17:50   | 15:49    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:28   | 17:37    | 18:37 | 20:41 | 21:40 | 22:07 | 21:37 | 20:27  | 19:05     | 16:47   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:13    | 08:48    |
|                     | 16:31   | 17:39    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:39    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 18:59     | 16:43   | 15:45    | 15:40    |
| 29                  | 08:18   |          | 05:54 | 05:35 | 04:37 | 04:25 | 05:06 | 06:08  | 07:10     | 07:12   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:40   | 15:44    | 15:41    |
| 30                  | 08:16   |          | 06:52 | 05:32 | 04:36 | 04:26 | 05:08 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:46 | 22:07 | 21:29 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                  | 08:14   |          | 06:49 |       | 04:34 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:39   |          | 19:47 |       | 21:48 |       | 21:27 | 20:14  |           | 16:36   |          | 15:43    |
| Potential sun hours | 235     | 265      | 365   | 425   | 507   | 529   | 529   | 470    | 385       | 324     | 248      | 216      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DD - Jaunie Robe ž nieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:23<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:05 | 05:17<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:31<br>21:53 | 04:30<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:47<br>15:50 | 08:05<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:22<br>21:00 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:31 | 07:37<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:01 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:13 | 05:07<br>21:14 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:16 | 04:24<br>22:03 | 04:41<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:18 | 04:24<br>22:04 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:06 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:16 | 06:30<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:13 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:17 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:19 | 07:55<br>18:00 | 08:02<br>15:56 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:37 | 04:24<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:38 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:02<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DE - Smelceja

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:30 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:25  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:47   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:23  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:48   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:29    | 15:41    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:46   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:54 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:11 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:34    |
|                     | 15:58   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:08 | 04:25 | 04:38 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:41   | 07:49    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:08 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:40   | 07:47    | 06:37 | 06:15 | 05:04 | 04:24 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:14 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:39   | 07:45    | 06:35 | 06:12 | 05:02 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:03 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:09   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:10   | 17:18    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:21 | 06:00 | 04:53 | 04:23 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:55 | 04:49 | 04:23 | 04:53 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:48 | 04:23 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:46    |
|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:37 | 21:36 | 22:07 | 21:40 | 20:32  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:35    | 18:35 | 20:39 | 21:38 | 22:07 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:42 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:47    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:07 | 21:37 | 20:27  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:08   | 08:13    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:41 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:37   |          | 19:45 | 20:50 | 21:46 | 22:06 | 21:29 | 20:17  | 18:54     | 16:38   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:49 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:47 |       | 21:48 |       | 21:27 | 20:14  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

SKEPAST &amp; PUHKIM

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DF - Kukas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:47   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:09    | 07:04 | 06:42 | 05:26 | 04:32 | 04:29 | 05:17  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:31 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:46   | 08:05    | 06:58 | 06:36 | 05:22 | 04:30 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:51   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:34 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:39    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:57   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:31   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:37    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:42   | 07:50    | 06:40 | 06:18 | 05:07 | 04:25 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                     | 16:02   | 17:07    | 18:08 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:47    | 06:38 | 06:15 | 05:05 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:03 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:03 | 21:55 | 20:57  | 19:37     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:06    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:30 | 06:08 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:09   | 17:16    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:13   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:47 | 05:44  | 06:46     | 07:47   | 07:54    | 08:42    |
|                     | 16:11   | 17:18    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:13   | 17:20    | 18:21 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:27     | 18:07   | 16:00    | 15:36    |
| 19                  | 08:34   | 07:33    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:15   | 17:22    | 18:23 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:17   | 17:24    | 18:25 | 20:29 | 21:29 | 22:07 | 21:47 | 20:43  | 19:21     | 18:03   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:19   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:19     | 18:00   | 15:56    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:58   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:46    |
|                     | 16:23   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:37 | 21:37 | 22:07 | 21:40 | 20:33  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:36    | 18:35 | 20:40 | 21:38 | 22:07 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:43 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:48    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:07 | 21:37 | 20:27  | 19:05     | 16:48   | 15:49    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:46   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:58 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:38 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:46 | 20:50 | 21:46 | 22:07 | 21:30 | 20:17  | 18:54     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:50 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DG - O šini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:48   | 08:10    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:23  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:08    | 07:04 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:48   | 16:46    | 17:49 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:05 | 21:19  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:46   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:39    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                     | 15:58   | 17:02    | 18:04 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:41   | 07:49    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:07    | 18:08 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:41   | 07:47    | 06:37 | 06:15 | 05:04 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:40   | 07:45    | 06:35 | 06:13 | 05:02 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:03 | 21:55 | 20:57  | 19:37     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:30 | 06:07 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:09   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:11   | 17:18    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:34   | 07:33    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:23 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:29    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:57   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:46    |
|                     | 16:23   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:37 | 21:37 | 22:07 | 21:40 | 20:32  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:35    | 18:35 | 20:39 | 21:38 | 22:07 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:12    | 08:47    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:07 | 21:37 | 20:27  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:08   | 08:13    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:45 | 20:50 | 21:46 | 22:07 | 21:29 | 20:17  | 18:54     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:49 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:48 |       | 21:48 |       | 21:27 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DH - Ošini

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:07 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:37 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:02<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:07 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

|              |                      |                                 |                                  |
|--------------|----------------------|---------------------------------|----------------------------------|
| Day in month | Sun rise (hh:mm)     | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|              | Sun set (hh:mm)      | Last time (hh:mm) with flicker  | (WTG causing flicker last time)  |
|              | Minutes with flicker |                                 |                                  |

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DI - Robežnieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:05 | 05:17<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:31<br>21:53 | 04:30<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:51 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:22<br>21:00 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:57 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:31 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:37 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:12 | 05:07<br>21:14 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:44<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:06 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:16 | 06:30<br>18:16 | 06:08<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:13 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:47<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:17 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:03 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:19 | 07:55<br>18:00 | 08:02<br>15:56 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:37 | 04:24<br>22:07 | 04:58<br>21:40 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:36 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:02<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:46 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:38<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:07 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DJ - Pumpuri

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:25  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:47   | 08:10    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:23  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:08    | 07:04 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:48   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:04 | 21:19  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:46   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:54 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:39    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:06 | 21:58 | 22:01 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:32   | 07:39    | 08:34    |
|                     | 15:58   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:41   | 07:49    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:08 | 20:12 | 21:14 | 22:02 | 21:57 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:40   | 07:47    | 06:37 | 06:15 | 05:04 | 04:24 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:14 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:39   | 07:45    | 06:35 | 06:13 | 05:02 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:03 | 21:55 | 20:57  | 19:37     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:09   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:11   | 17:18    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:33   | 07:33    | 06:21 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:48 | 04:23 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:20   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:46    |
|                     | 16:23   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:37 | 21:36 | 22:07 | 21:40 | 20:32  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:35    | 18:35 | 20:39 | 21:38 | 22:07 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:38    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:42 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12    | 08:47    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:07 | 21:37 | 20:27  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:08   | 08:13    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:41 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:45 | 20:50 | 21:46 | 22:06 | 21:29 | 20:17  | 18:54     | 16:38   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:49 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:47 |       | 21:48 |       | 21:27 | 20:14  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DK - Pumpuri

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:14<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:57 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:40<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:33<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DL - Berzkalnes

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:47 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:42<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:05 | 05:17<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:31<br>21:53 | 04:30<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:05<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:22<br>21:00 | 04:30<br>21:55 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:34<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:31 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:42<br>16:02 | 07:50<br>17:07 | 06:40<br>18:08 | 06:18<br>20:12 | 05:07<br>21:14 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:05<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:36 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:06 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:16 | 06:30<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:13 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:36 |
| 19                  | 08:34<br>16:15 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:17 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:19 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:19 | 07:55<br>18:00 | 08:02<br>15:56 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:55<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:37 | 04:24<br>22:07 | 04:58<br>21:40 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:43<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:02<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:49 | 08:48<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:58<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:50<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DM - Arsmenieki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:50 | 04:28<br>22:06 | 05:14<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:38<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:57 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:40<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:16 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:54 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:55<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:33<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:06 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:41 | 04:42<br>21:40 | 04:24<br>22:07 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:11<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DN - Smelceju majas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:30<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:07 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:25<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:36 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:06 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:56 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:55<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:24<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:02<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DO - Zemites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:30 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:25  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:47   | 08:10    | 07:06 | 06:44 | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:23  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:08    | 07:03 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:48   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:29    | 15:41    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:04 | 21:19  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:46   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:54 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:28 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:01 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:11 | 04:26 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:34    |
|                     | 15:58   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:08 | 04:25 | 04:38 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:41   | 07:49    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:06    | 18:08 | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:40   | 07:47    | 06:37 | 06:15 | 05:04 | 04:24 | 04:40 | 05:36  | 06:38     | 07:38   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:14 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                  | 08:39   | 07:45    | 06:35 | 06:12 | 05:02 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:03 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:09   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:10   | 17:18    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:33   | 07:33    | 06:21 | 06:00 | 04:53 | 04:23 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:48 | 04:23 | 04:54 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
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|                     | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:45 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
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| 31                  | 08:14   |          | 06:49 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:47 |       | 21:48 |       | 21:27 | 20:14  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DP - Arsmeneki

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:50 | 04:28<br>22:06 | 05:14<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:38<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:57 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:54 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:55<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:33<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:06 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:41 | 04:42<br>21:40 | 04:24<br>22:07 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:11<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

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+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DQ - Upi š i

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:48<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:07 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:41<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:37 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:02<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:07 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DR - Aizveji

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:14<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:40<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DS - Dzervites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|---------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                   | 08:48   | 08:12    | 07:09 | 06:47 | 05:31 | 04:34 | 04:27 | 05:13  | 06:14     | 07:14   | 07:19    | 08:21    |
|                     | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:25  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                   | 08:47   | 08:10    | 07:06 | 06:44 | 05:28 | 04:33 | 04:28 | 05:15  | 06:16     | 07:16   | 07:21    | 08:22    |
|                     | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:50 | 22:06 | 21:23  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                   | 08:47   | 08:08    | 07:04 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:23    | 08:24    |
|                     | 15:48   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:21  | 20:07     | 18:46   | 16:30    | 15:41    |
| 4                   | 08:47   | 08:06    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                     | 15:49   | 16:49    | 17:51 | 19:56 | 20:58 | 21:53 | 22:04 | 21:19  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                   | 08:46   | 08:04    | 06:58 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:27    |
|                     | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:54 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                   | 08:46   | 08:02    | 06:56 | 06:33 | 05:19 | 04:29 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                     | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:39    |
| 7                   | 08:45   | 08:00    | 06:53 | 06:31 | 05:17 | 04:28 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:30    |
|                     | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:02 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                   | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                     | 15:55   | 16:58    | 17:59 | 20:04 | 21:06 | 21:58 | 22:01 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                   | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:36    | 08:33    |
|                     | 15:56   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:08  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                  | 08:43   | 07:54    | 06:45 | 06:23 | 05:11 | 04:26 | 04:37 | 05:30  | 06:32     | 07:32   | 07:39    | 08:34    |
|                     | 15:58   | 17:02    | 18:04 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                  | 08:42   | 07:52    | 06:43 | 06:20 | 05:09 | 04:25 | 04:38 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                     | 16:00   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                  | 08:41   | 07:49    | 06:40 | 06:18 | 05:06 | 04:25 | 04:39 | 05:34  | 06:36     | 07:36   | 07:43    | 08:37    |
|                     | 16:01   | 17:07    | 18:08 | 20:12 | 21:14 | 22:02 | 21:57 | 21:02  | 19:43     | 18:23   | 16:11    | 15:36    |
| 13                  | 08:40   | 07:47    | 06:37 | 06:15 | 05:04 | 04:24 | 04:41 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                     | 16:03   | 17:09    | 18:10 | 20:14 | 21:16 | 22:03 | 21:56 | 20:59  | 19:40     | 18:20   | 16:09    | 15:36    |
| 14                  | 08:39   | 07:45    | 06:35 | 06:13 | 05:02 | 04:24 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:39    |
|                     | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:03 | 21:55 | 20:57  | 19:37     | 18:18   | 16:07    | 15:35    |
| 15                  | 08:38   | 07:43    | 06:32 | 06:10 | 05:01 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:40    |
|                     | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                  | 08:37   | 07:40    | 06:29 | 06:07 | 04:59 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:51    | 08:41    |
|                     | 16:09   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                  | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:53    | 08:42    |
|                     | 16:11   | 17:18    | 18:18 | 20:23 | 21:24 | 22:05 | 21:51 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                  | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:23 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                     | 16:13   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                  | 08:33   | 07:33    | 06:22 | 06:00 | 04:53 | 04:23 | 04:50 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                     | 16:14   | 17:22    | 18:22 | 20:27 | 21:28 | 22:06 | 21:48 | 20:45  | 19:24     | 18:05   | 15:59    | 15:36    |
| 20                  | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:23 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                     | 16:16   | 17:24    | 18:25 | 20:29 | 21:29 | 22:07 | 21:47 | 20:42  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                  | 08:31   | 07:28    | 06:16 | 05:55 | 04:50 | 04:23 | 04:53 | 05:52  | 06:54     | 07:55   | 08:02    | 08:45    |
|                     | 16:18   | 17:27    | 18:27 | 20:31 | 21:31 | 22:07 | 21:45 | 20:40  | 19:18     | 18:00   | 15:55    | 15:36    |
| 22                  | 08:29   | 07:26    | 06:13 | 05:52 | 04:48 | 04:23 | 04:55 | 05:54  | 06:56     | 07:57   | 08:04    | 08:46    |
|                     | 16:21   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:37  | 19:16     | 17:57   | 15:54    | 15:37    |
| 23                  | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:46    |
|                     | 16:23   | 17:31    | 18:31 | 20:35 | 21:35 | 22:07 | 21:42 | 20:35  | 19:13     | 17:55   | 15:53    | 15:37    |
| 24                  | 08:26   | 07:21    | 06:08 | 05:47 | 04:45 | 04:24 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                     | 16:25   | 17:33    | 18:33 | 20:37 | 21:36 | 22:07 | 21:40 | 20:32  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                  | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                     | 16:27   | 17:35    | 18:35 | 20:39 | 21:38 | 22:07 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:39    |
| 26                  | 08:23   | 07:16    | 06:03 | 05:42 | 04:42 | 04:24 | 05:02 | 06:02  | 07:04     | 07:06   | 08:11    | 08:47    |
|                     | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:07 | 21:37 | 20:27  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                  | 08:21   | 07:14    | 06:00 | 05:40 | 04:40 | 04:25 | 05:03 | 06:04  | 07:06     | 07:08   | 08:13    | 08:48    |
|                     | 16:31   | 17:40    | 18:39 | 20:44 | 21:41 | 22:07 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:40    |
| 28                  | 08:20   | 07:11    | 05:57 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 07:10   | 08:15    | 08:48    |
|                     | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                  | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17    | 08:48    |
|                     | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:31 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                  | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:27 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19    | 08:48    |
|                     | 16:38   |          | 19:45 | 20:50 | 21:46 | 22:06 | 21:29 | 20:17  | 18:54     | 16:39   | 15:44    | 15:43    |
| 31                  | 08:14   |          | 06:49 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                     | 16:40   |          | 19:47 |       | 21:48 |       | 21:27 | 20:14  |           | 16:36   |          | 15:44    |
| Potential sun hours | 235     | 266      | 365   | 425   | 507   | 528   | 529   | 470    | 385       | 324     | 248      | 217      |
| Total, worst case   |         |          |       |       |       |       |       |        |           |         |          |          |
| Sun reduction       |         |          |       |       |       |       |       |        |           |         |          |          |
| Oper. time red.     |         |          |       |       |       |       |       |        |           |         |          |          |
| Wind dir. red.      |         |          |       |       |       |       |       |        |           |         |          |          |
| Total reduction     |         |          |       |       |       |       |       |        |           |         |          |          |
| Total, real         |         |          |       |       |       |       |       |        |           |         |          |          |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DT - Jaunmasani

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:47 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:51 | 04:28<br>22:06 | 05:15<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:32<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:30<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:07 | 06:40<br>18:08 | 06:18<br>20:12 | 05:07<br>21:14 | 04:25<br>22:02 | 04:39<br>21:57 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:36 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:03<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:06 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:13 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:36 |
| 19                  | 08:33<br>16:14 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:56 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:21 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:55<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:24<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:39 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:02<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DU - Airites

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:40<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:33<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:49<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:07 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:42<br>21:40 | 04:24<br>22:07 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar

Calculation: Alternative - Worst &amp; Real case Shadow receptor: DV - Upmalas

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

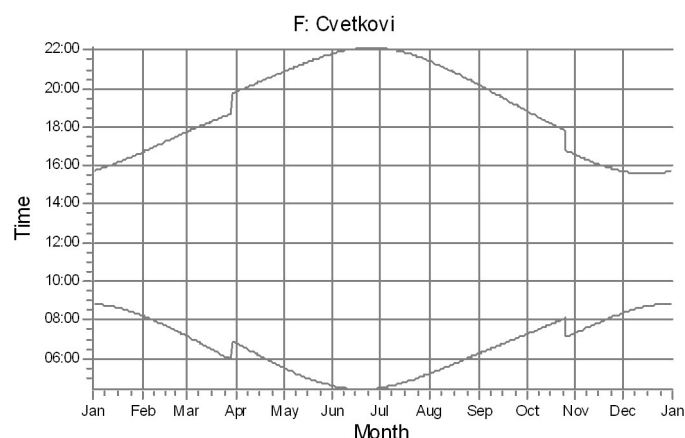
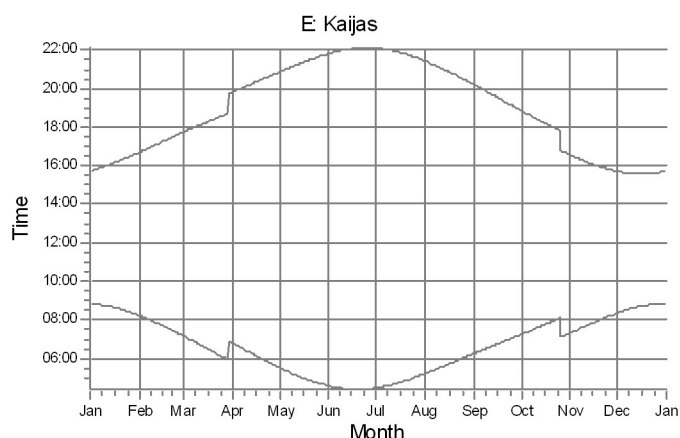
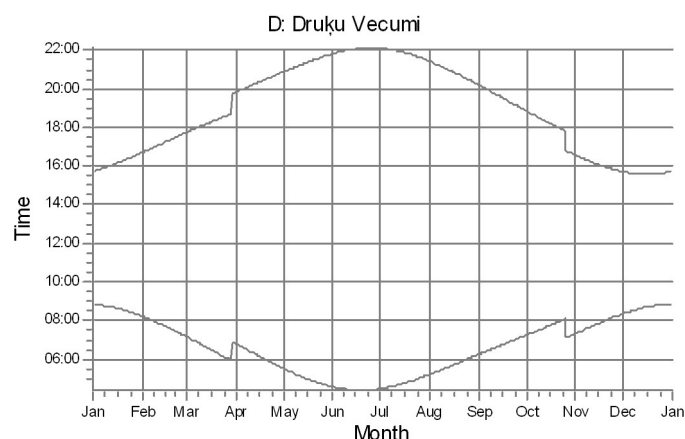
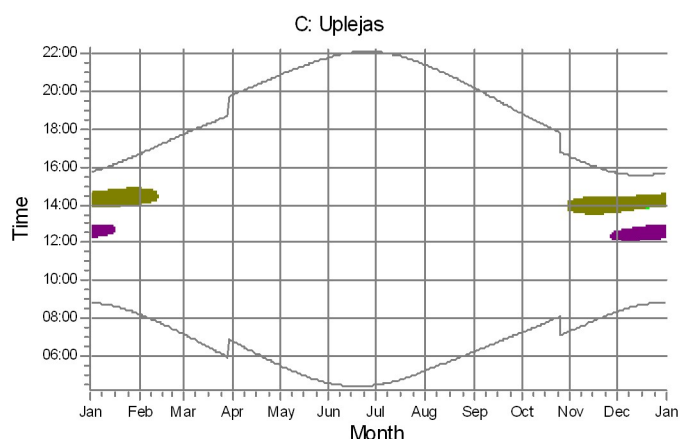
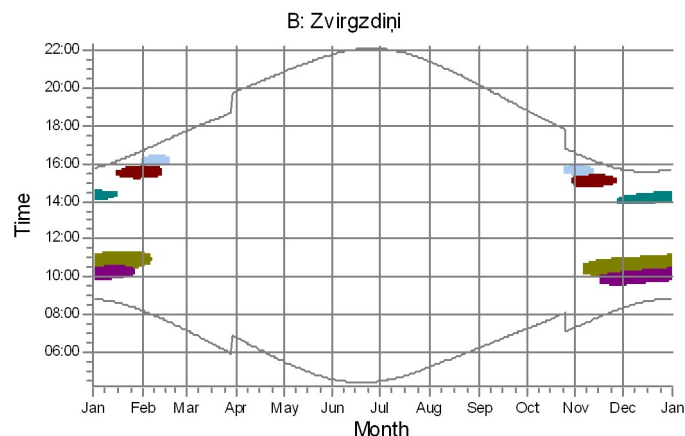
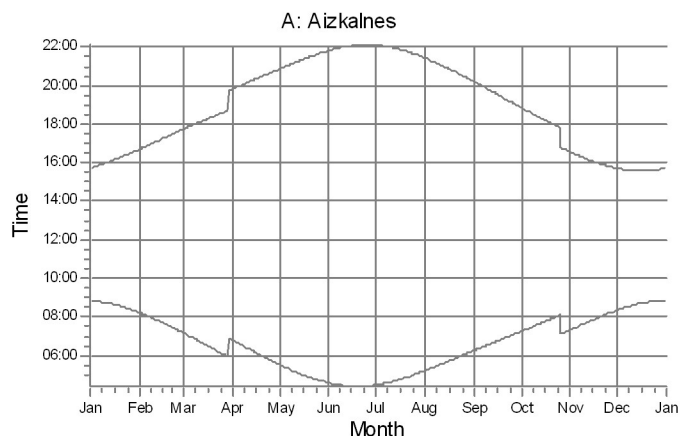
|                     | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                   | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:31<br>20:52 | 04:34<br>21:49 | 04:27<br>22:06 | 05:13<br>21:25 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                   | 08:47<br>15:46 | 08:10<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:33<br>21:50 | 04:28<br>22:06 | 05:15<br>21:23 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:22<br>15:42 |
| 3                   | 08:47<br>15:48 | 08:08<br>16:46 | 07:03<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:21 | 06:18<br>20:07 | 07:18<br>18:46 | 07:23<br>16:30 | 08:24<br>15:41 |
| 4                   | 08:47<br>15:49 | 08:06<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:53 | 04:30<br>22:04 | 05:18<br>21:19 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                   | 08:46<br>15:50 | 08:04<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:54 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                   | 08:46<br>15:52 | 08:02<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:29<br>21:56 | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:39 |
| 7                   | 08:45<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:02 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:30<br>15:38 |
| 8                   | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:01 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                   | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:08 | 06:30<br>19:51 | 07:30<br>18:30 | 07:36<br>16:17 | 08:33<br>15:37 |
| 10                  | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:11<br>21:10 | 04:26<br>22:00 | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:34<br>15:36 |
| 11                  | 08:42<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                  | 08:41<br>16:01 | 07:49<br>17:06 | 06:40<br>18:08 | 06:18<br>20:12 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:57 | 05:34<br>21:02 | 06:36<br>19:43 | 07:36<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                  | 08:40<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:15<br>20:14 | 05:04<br>21:16 | 04:24<br>22:03 | 04:41<br>21:56 | 05:36<br>20:59 | 06:38<br>19:40 | 07:38<br>18:20 | 07:45<br>16:09 | 08:38<br>15:36 |
| 14                  | 08:39<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:24<br>22:03 | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                  | 08:38<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:01<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:54 | 06:42<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:40<br>15:35 |
| 16                  | 08:37<br>16:09 | 07:40<br>17:15 | 06:29<br>18:16 | 06:07<br>20:21 | 04:59<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:51<br>16:04 | 08:41<br>15:35 |
| 17                  | 08:36<br>16:11 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:05 | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:53<br>16:02 | 08:42<br>15:35 |
| 18                  | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:47 | 06:48<br>19:27 | 07:49<br>18:07 | 07:55<br>16:00 | 08:43<br>15:35 |
| 19                  | 08:33<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:23<br>22:06 | 04:50<br>21:48 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                  | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:29 | 04:23<br>22:06 | 04:51<br>21:47 | 05:50<br>20:42 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                  | 08:31<br>16:18 | 07:28<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:50<br>21:31 | 04:23<br>22:07 | 04:53<br>21:45 | 05:52<br>20:40 | 06:54<br>19:18 | 07:55<br>18:00 | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                  | 08:29<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:37 | 06:56<br>19:16 | 07:57<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                  | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:07 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:53 | 08:46<br>15:37 |
| 24                  | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:37 | 04:45<br>21:36 | 04:23<br>22:07 | 04:58<br>21:40 | 05:58<br>20:32 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                  | 08:25<br>16:27 | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:39 | 04:43<br>21:38 | 04:24<br>22:07 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                  | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:41 | 04:42<br>21:40 | 04:24<br>22:07 | 05:01<br>21:37 | 06:02<br>20:27 | 07:04<br>19:05 | 07:06<br>16:48 | 08:11<br>15:48 | 08:47<br>15:39 |
| 27                  | 08:21<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:41 | 04:25<br>22:07 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:13<br>15:47 | 08:48<br>15:40 |
| 28                  | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00 | 07:10<br>16:43 | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                  | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:31 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                  | 08:16<br>16:38 |                | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:46 | 04:27<br>22:06 | 05:09<br>21:29 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                  | 08:14<br>16:40 |                | 06:49<br>19:47 |                | 04:35<br>21:48 |                | 05:11<br>21:27 | 06:12<br>20:14 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours | 235            | 266            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 217            |
| Total, worst case   |                |                |                |                |                |                |                |                |                |                |                |                |
| Sun reduction       |                |                |                |                |                |                |                |                |                |                |                |                |
| Oper. time red.     |                |                |                |                |                |                |                |                |                |                |                |                |
| Wind dir. red.      |                |                |                |                |                |                |                |                |                |                |                |                |
| Total reduction     |                |                |                |                |                |                |                |                |                |                |                |                |
| Total, real         |                |                |                |                |                |                |                |                |                |                |                |                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | (WTG causing flicker first time) | (WTG causing flicker last time) |
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|
|--------------|------------------|-----------------|----------------------|---------------------------------|--------------------------------|----------------------------------|---------------------------------|

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

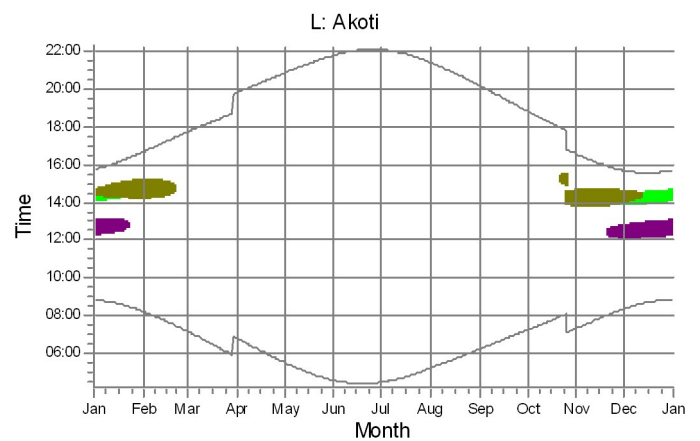
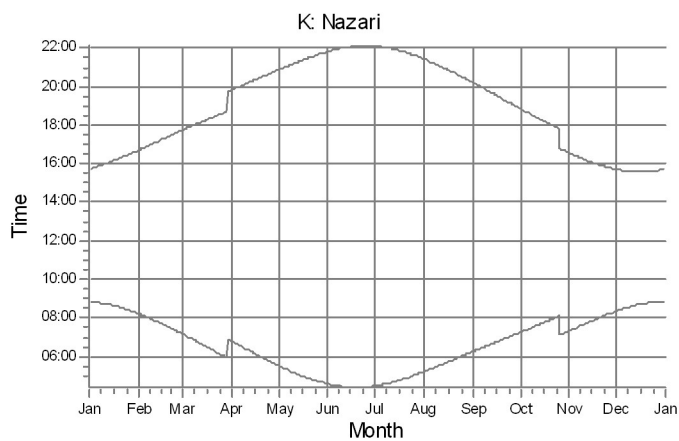
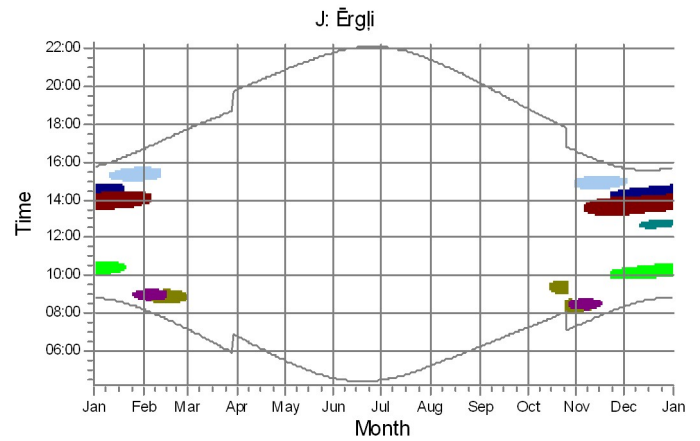
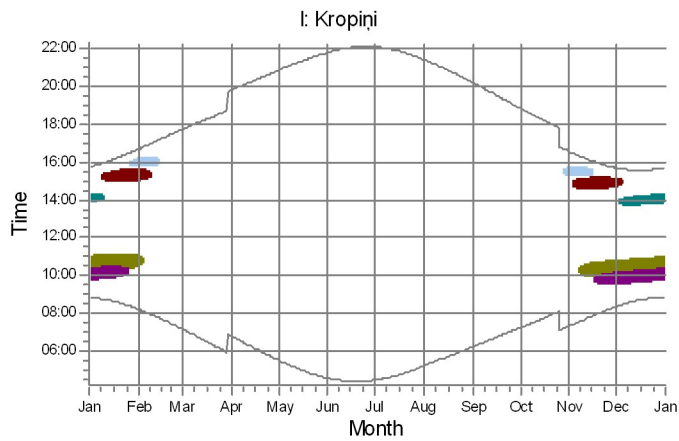
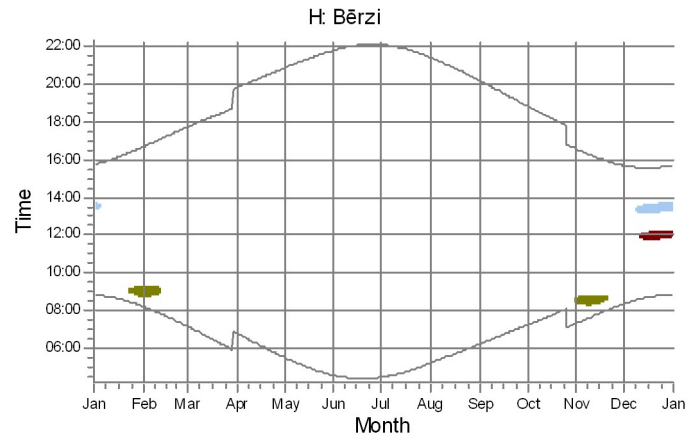
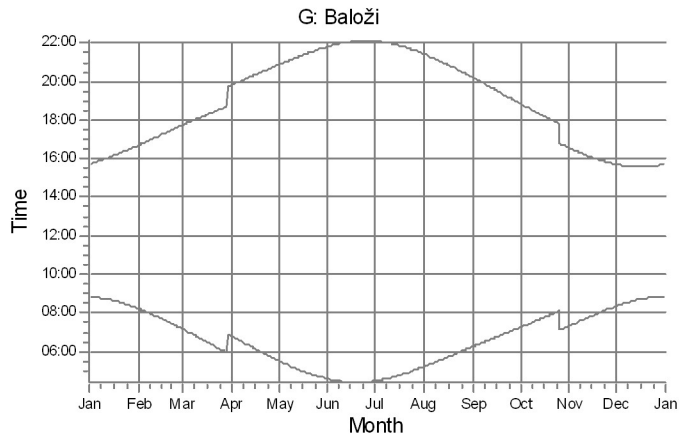


WTGs

|       |          |          |
|-------|----------|----------|
| 6: 18 | 9: 24    | 11: 22-A |
| 8: 17 | 10: 21-A | 15: 13-A |

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

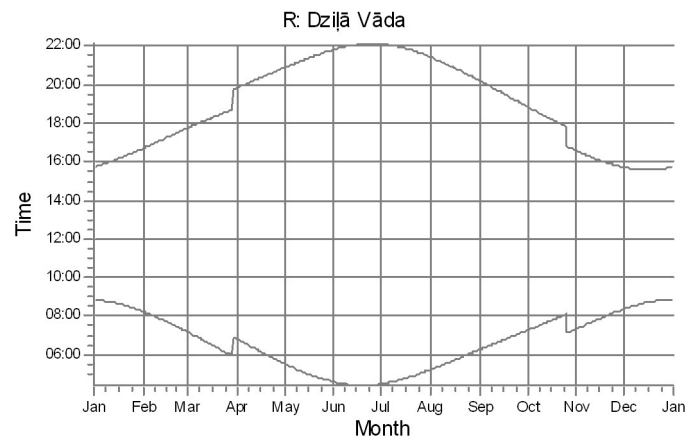
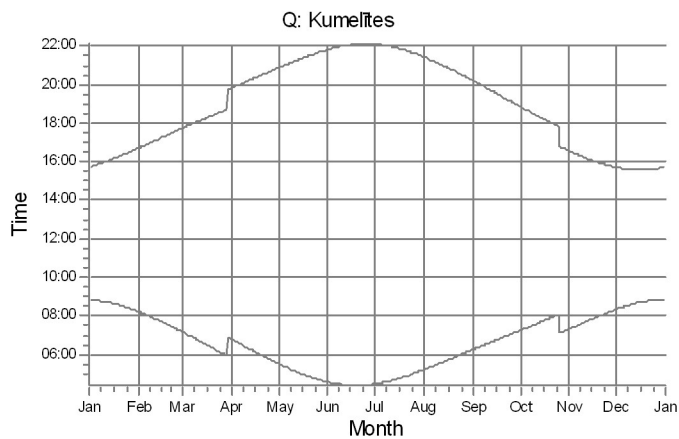
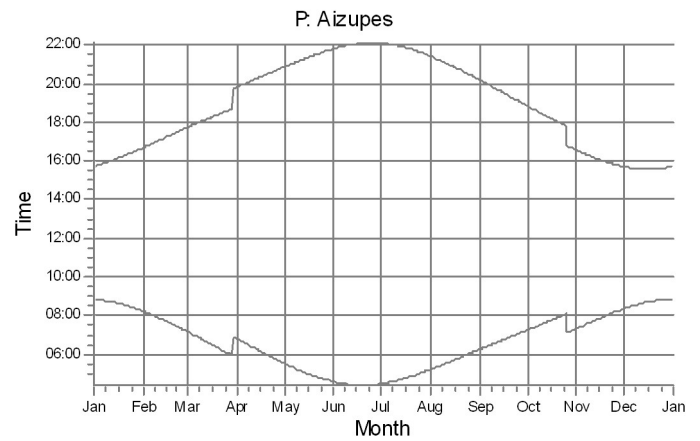
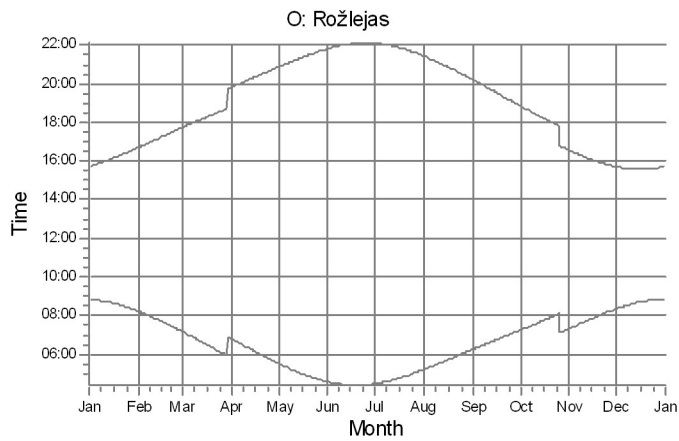
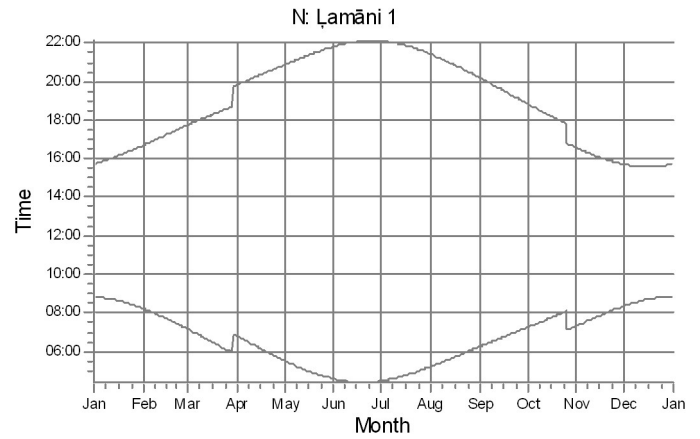
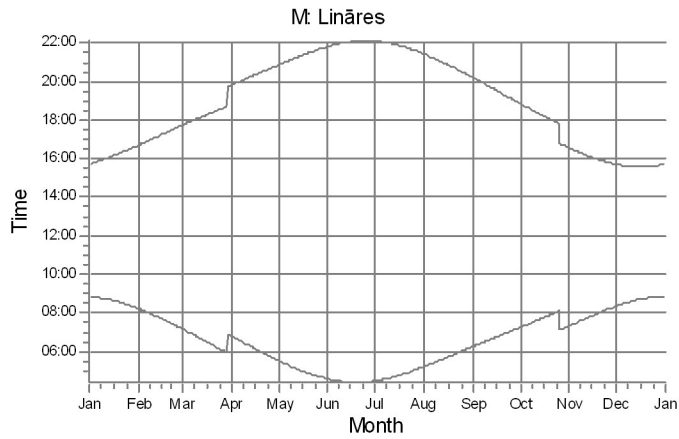


WTGs



## SHADOW - Calendar, graphical

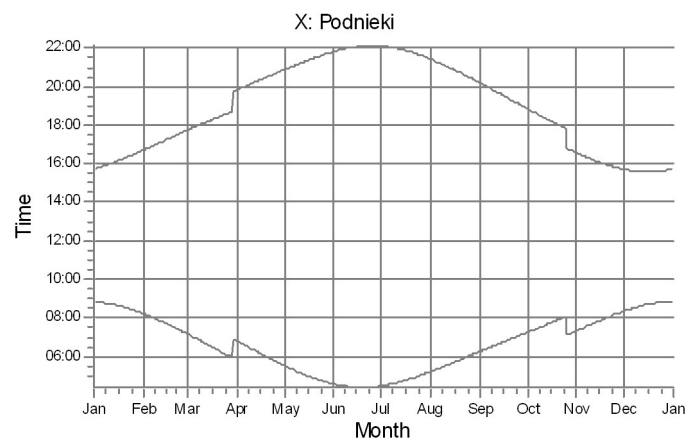
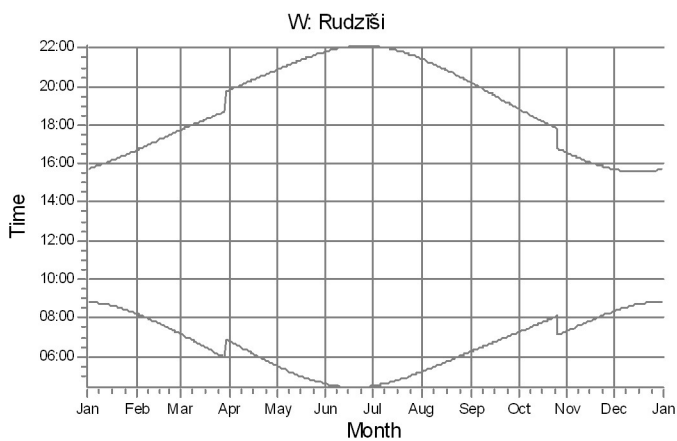
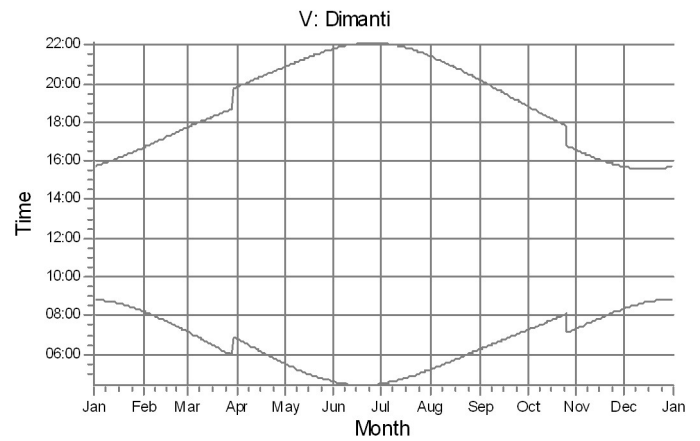
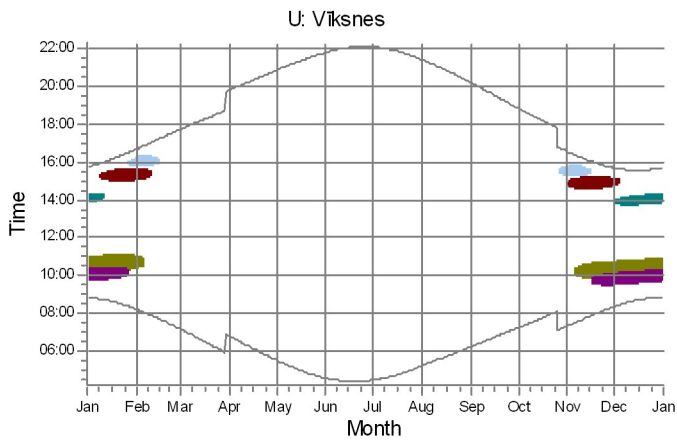
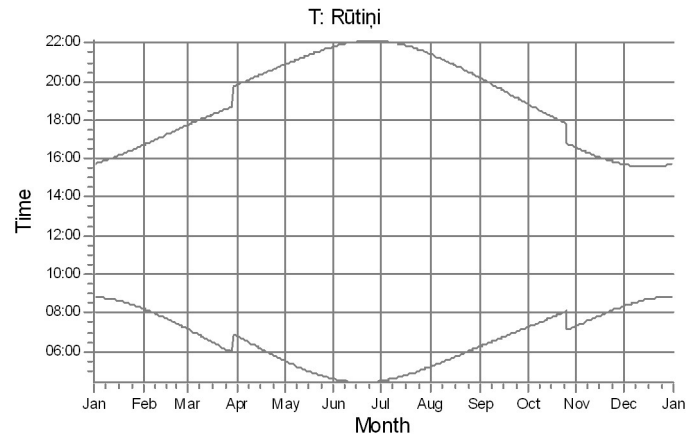
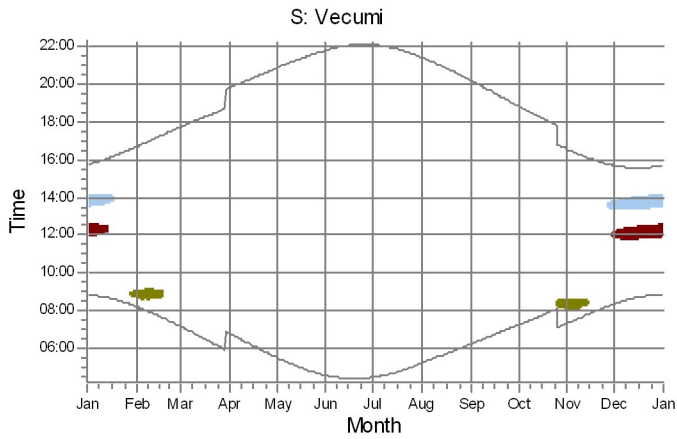
Calculation: Alternative - Worst & Real case



WTGs

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

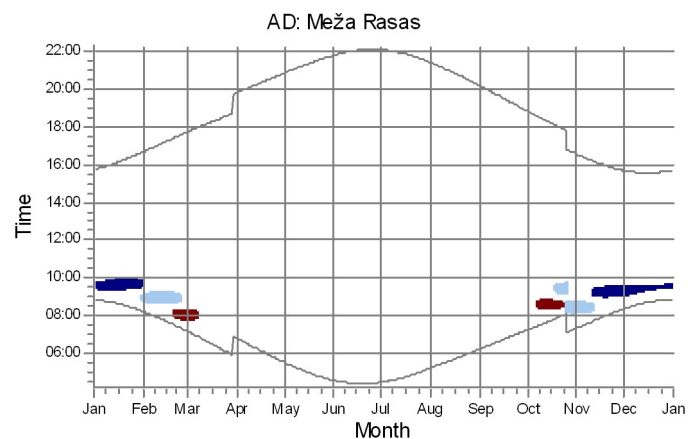
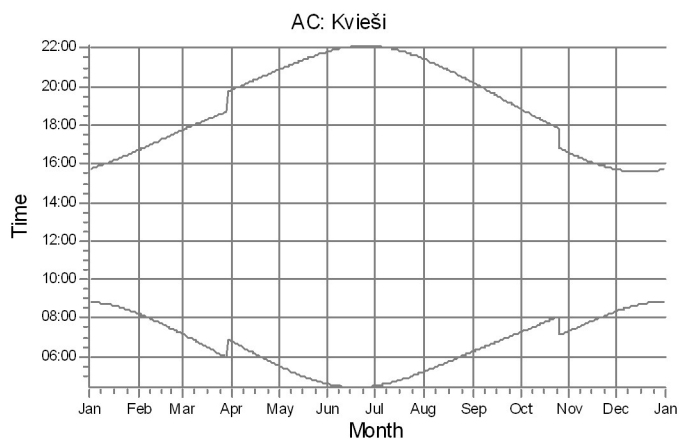
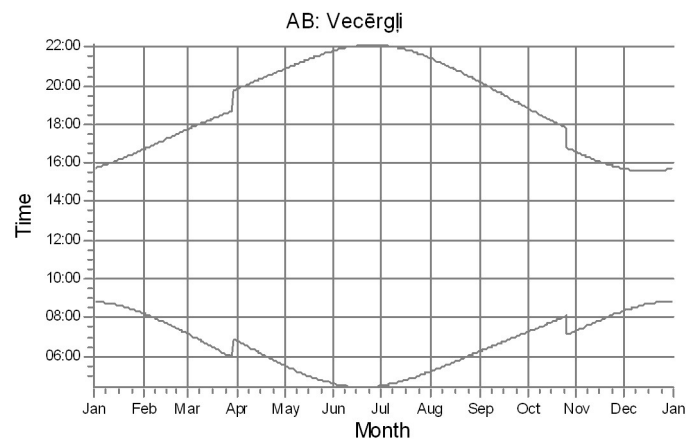
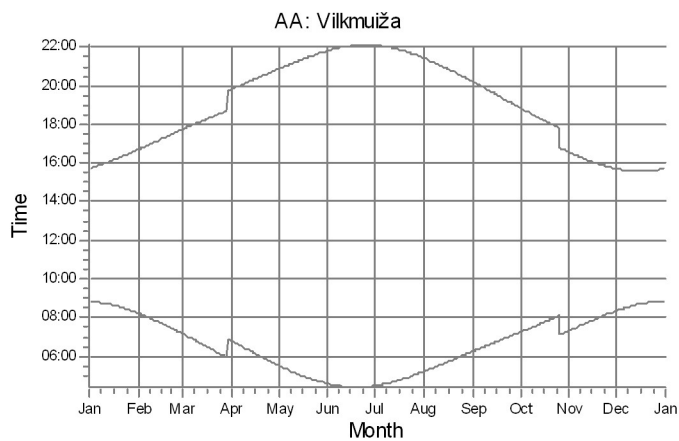
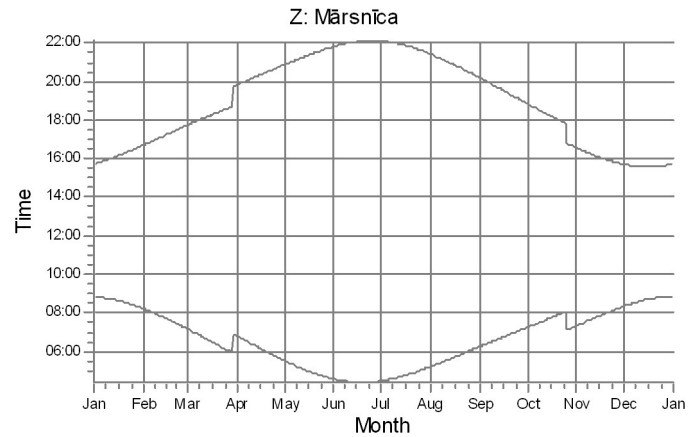
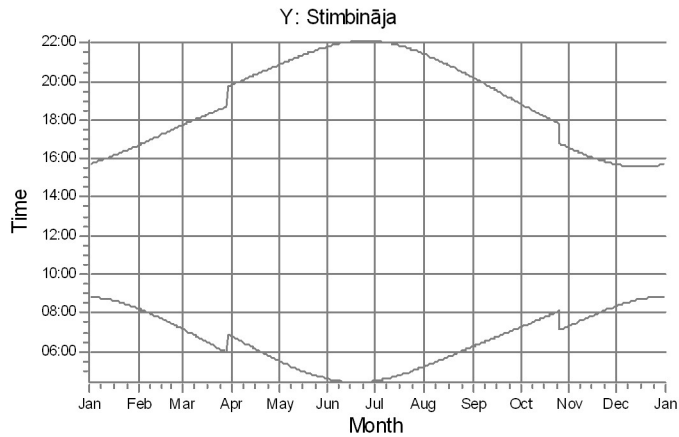


WTGs



## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case



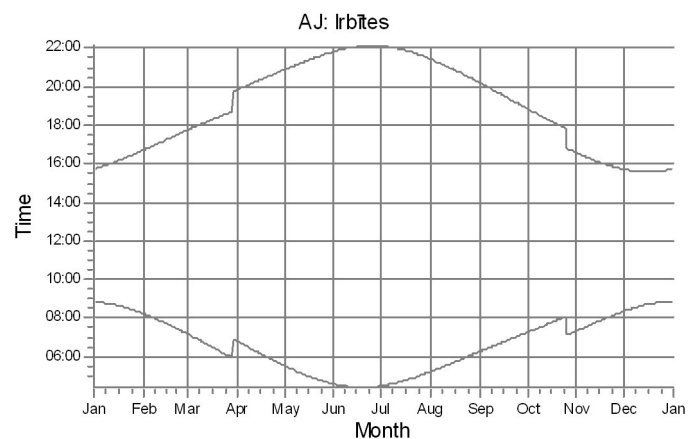
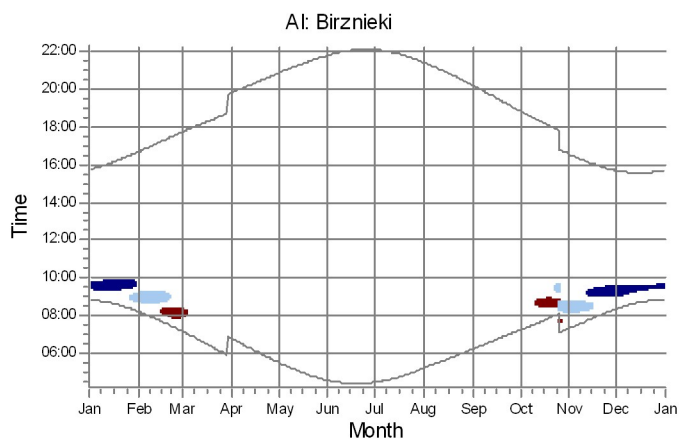
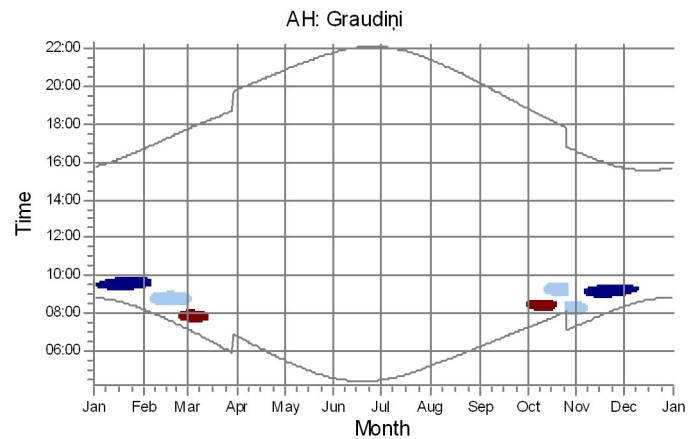
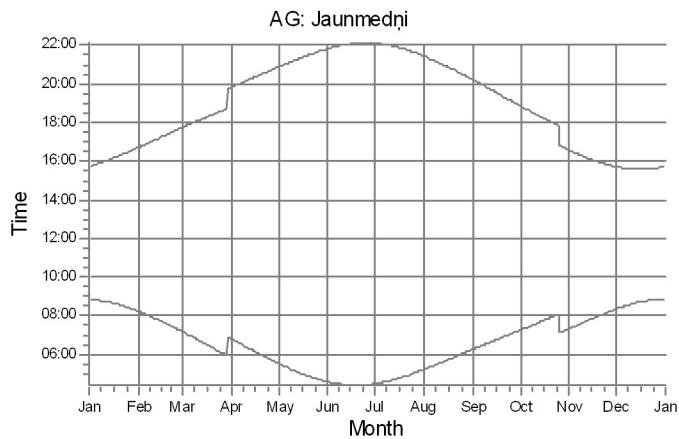
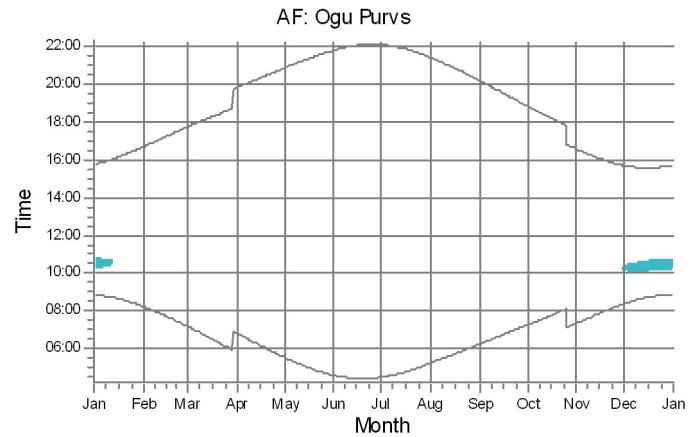
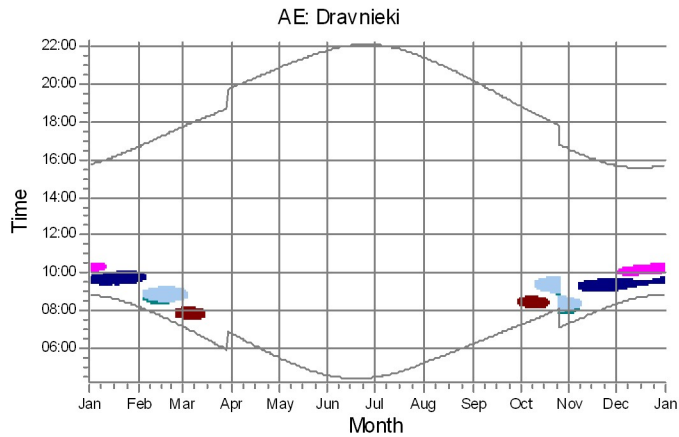
WTGs





## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

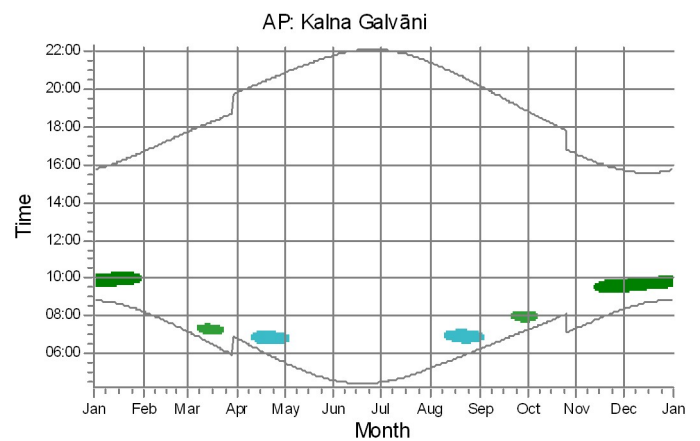
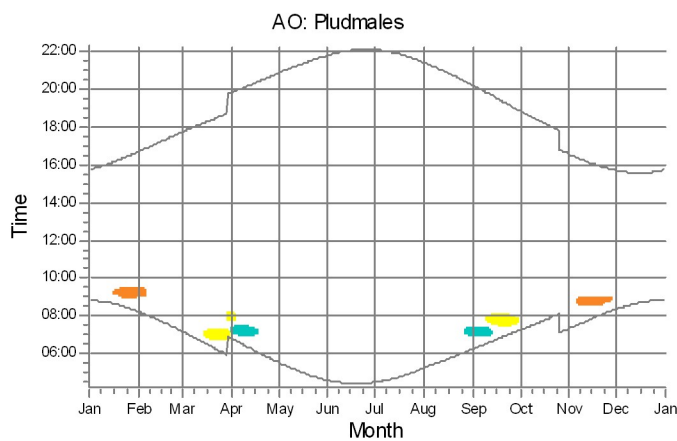
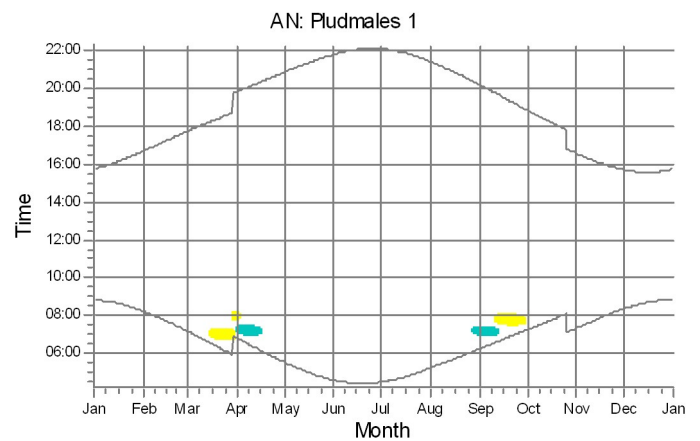
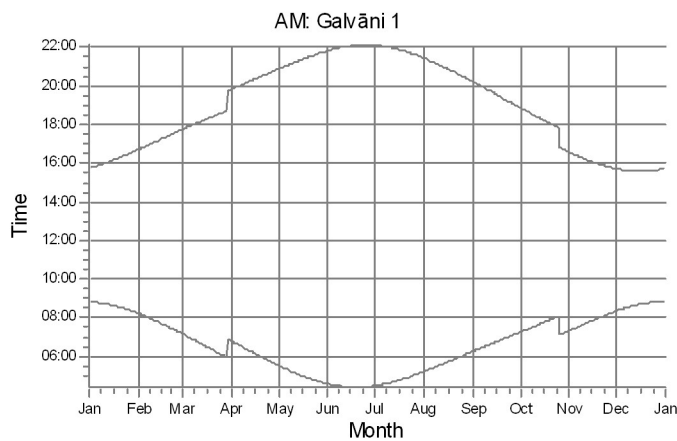
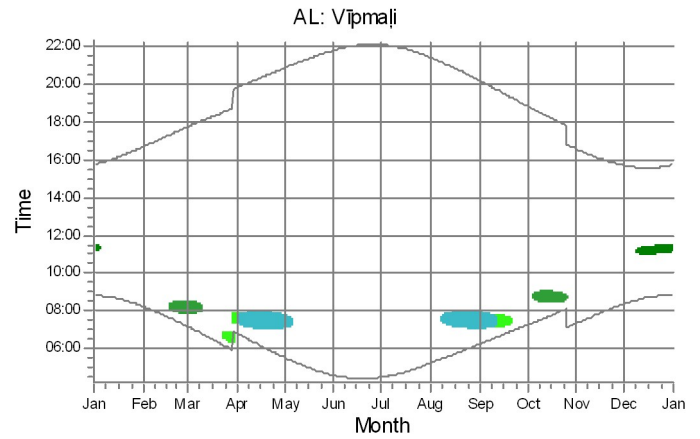
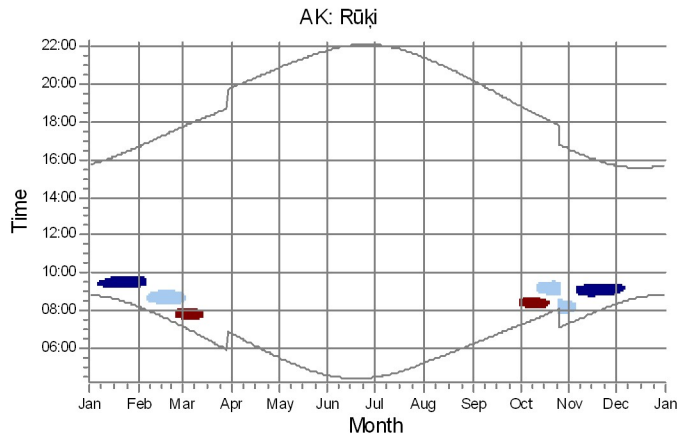


### WTGs

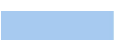
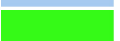
|  |       |  |       |  |          |
|--|-------|--|-------|--|----------|
|  | 5: 12 |  | 7: 14 |  | 15: 13-A |
|  | 6: 18 |  | 8: 17 |  | 19: 03-A |

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

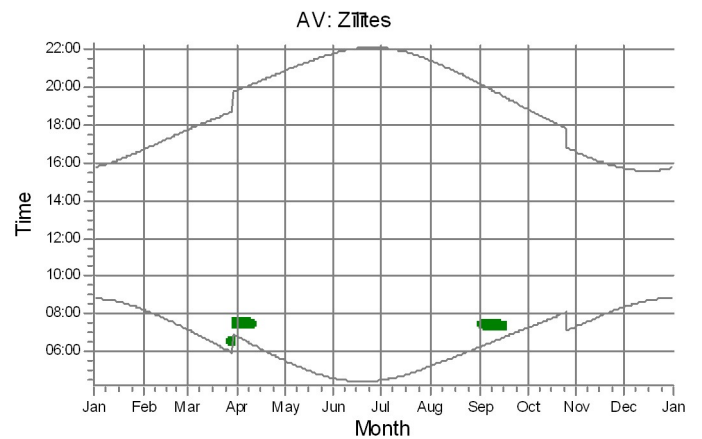
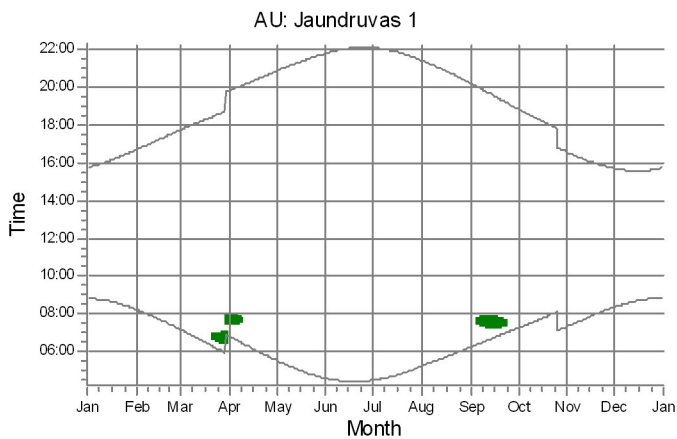
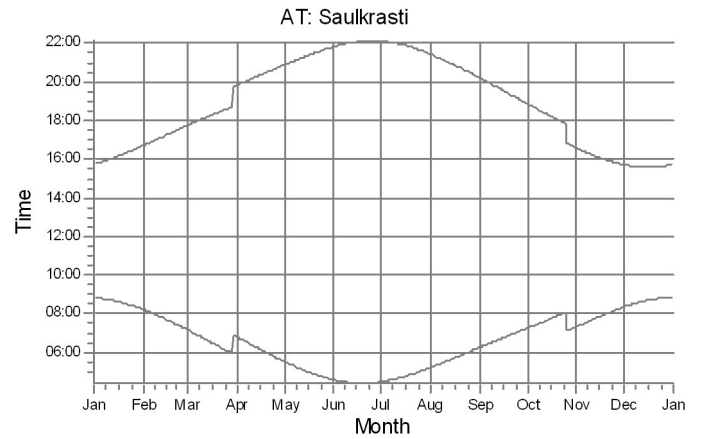
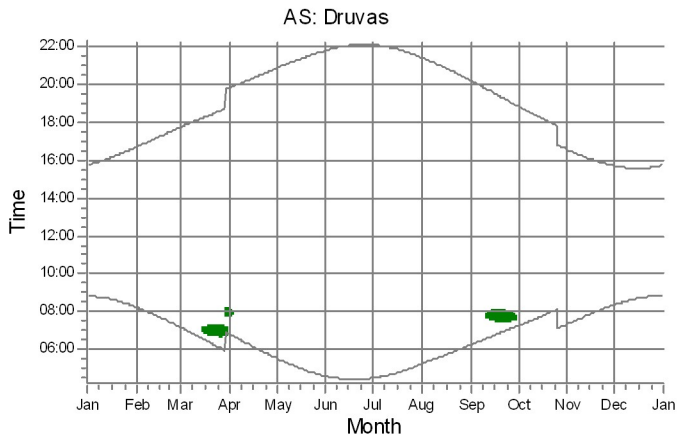
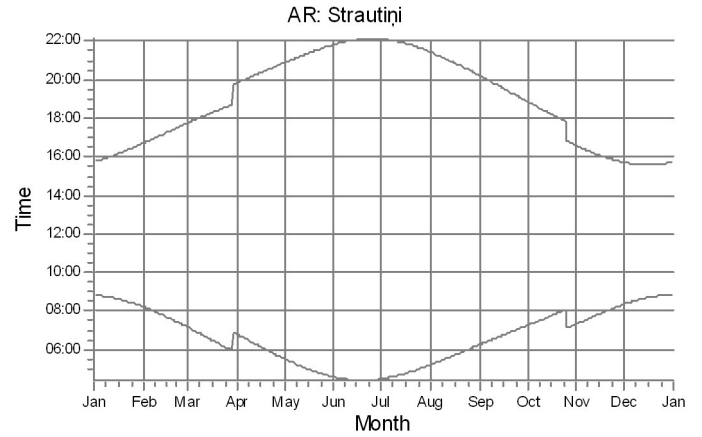
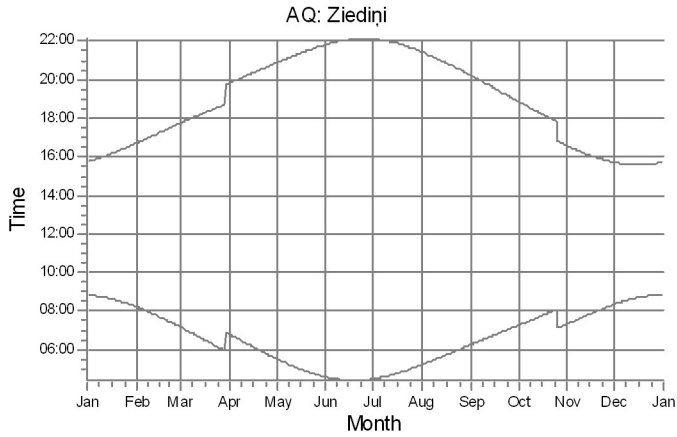


### WTGs

|                                                                                     |      |                                                                                     |       |                                                                                     |          |                                                                                      |          |                                                                                       |          |
|-------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|----------|
|  | 1: 1 |  | 7: 14 |  | 15: 13-A |  | 19: 03-A |  | 21: 06-A |
|  | 2: 2 |  | 8: 17 |  | 18: 08-A |  | 20: 04-A |  | 23: 32-C |

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

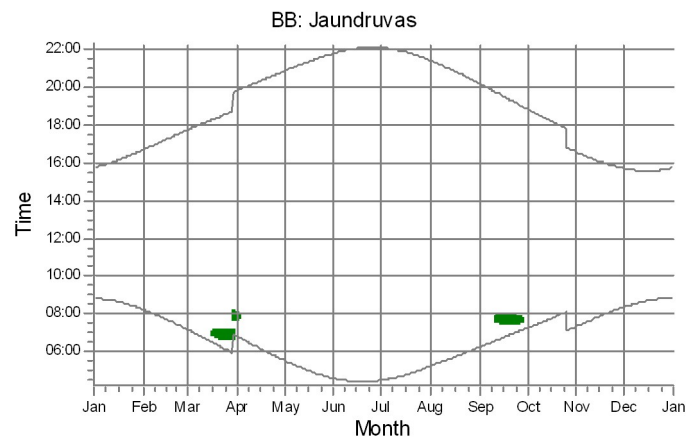
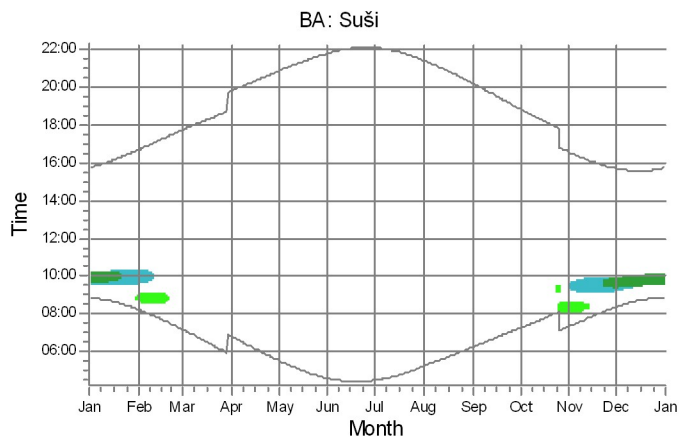
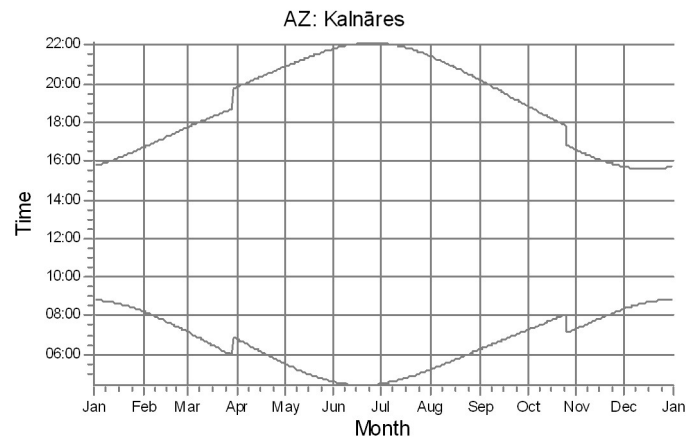
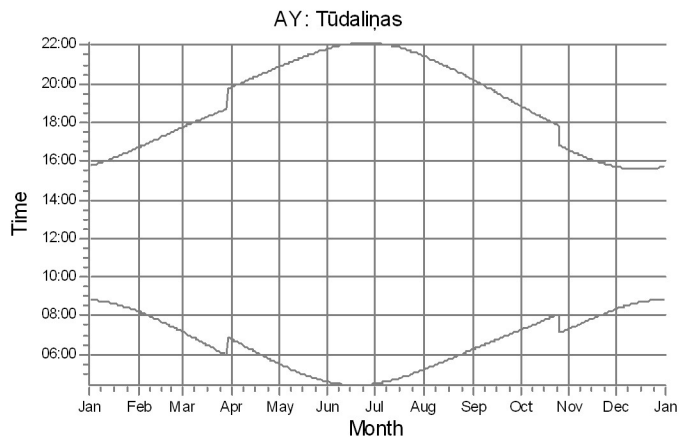
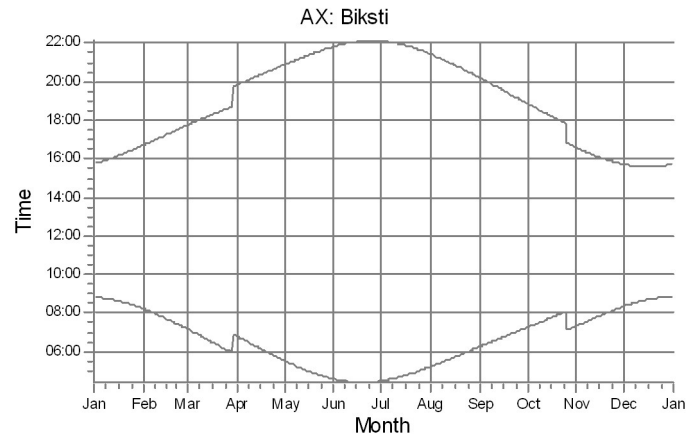
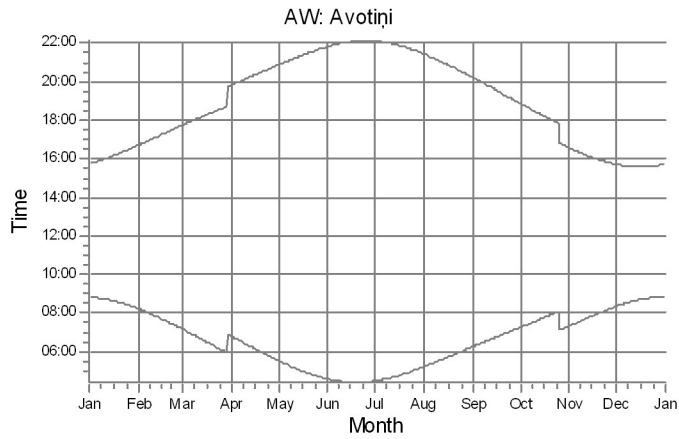


WTGs

1: 1

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

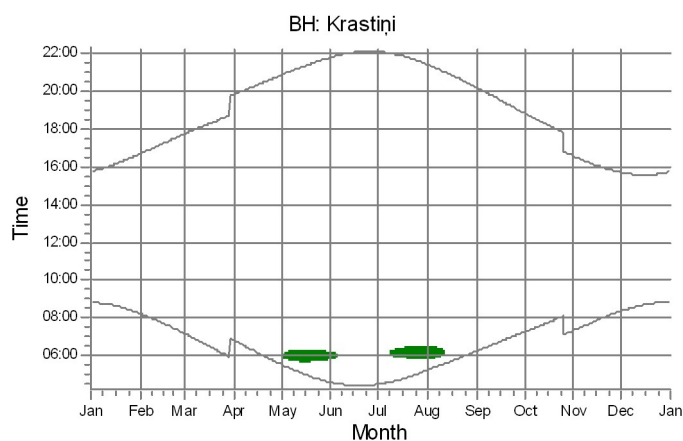
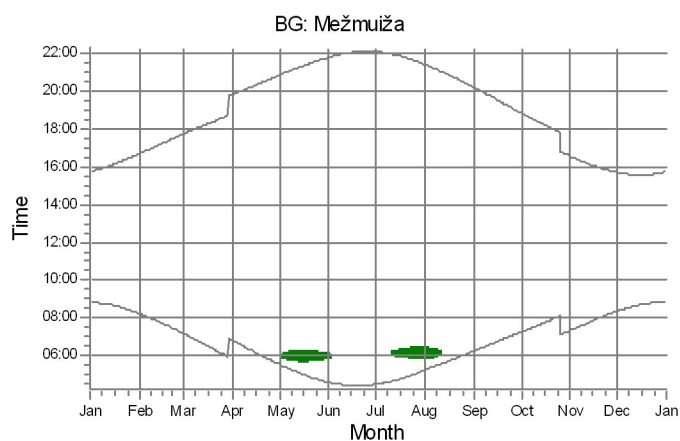
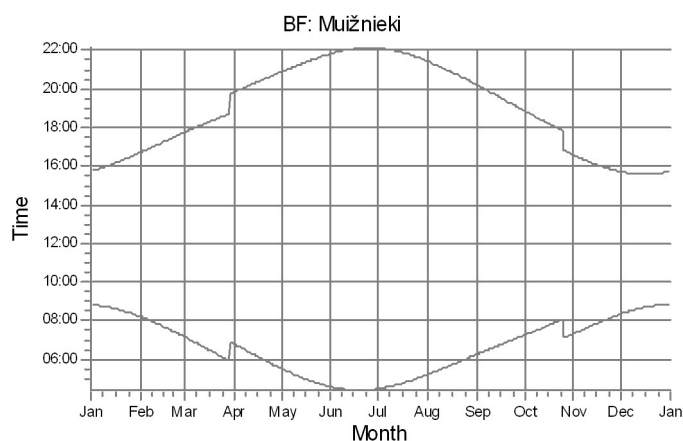
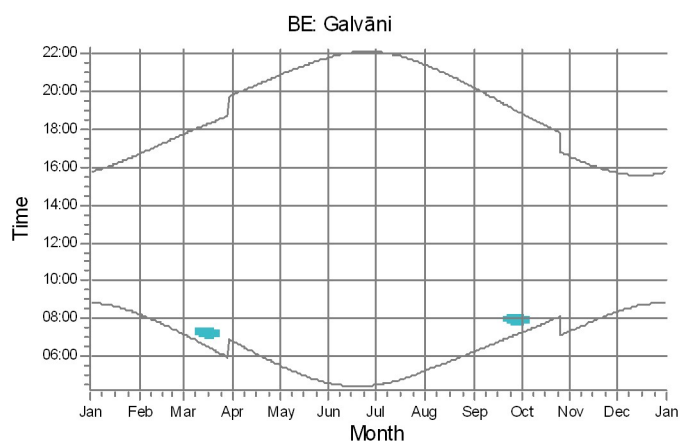
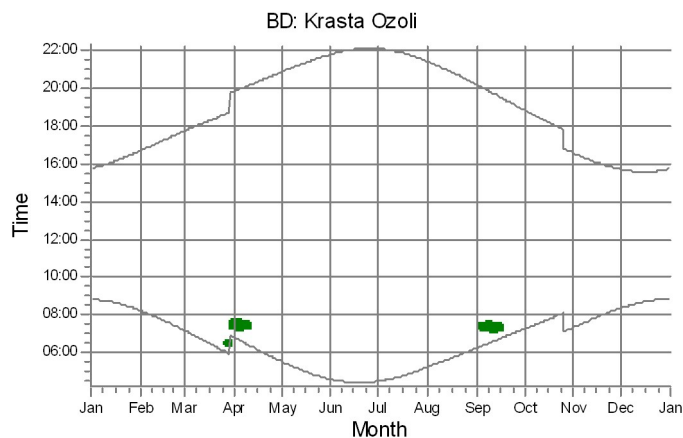
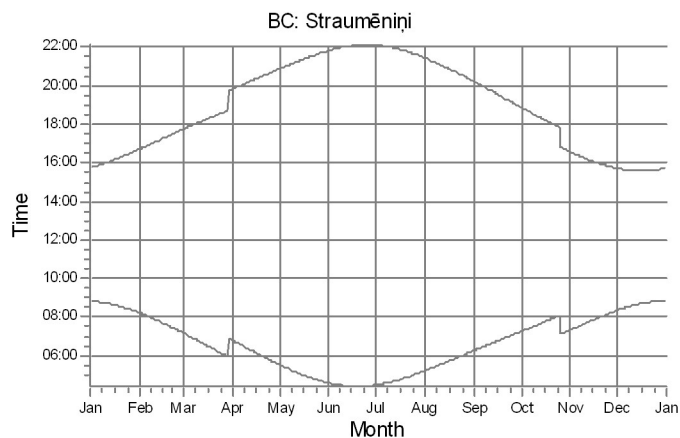


WTGs



## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

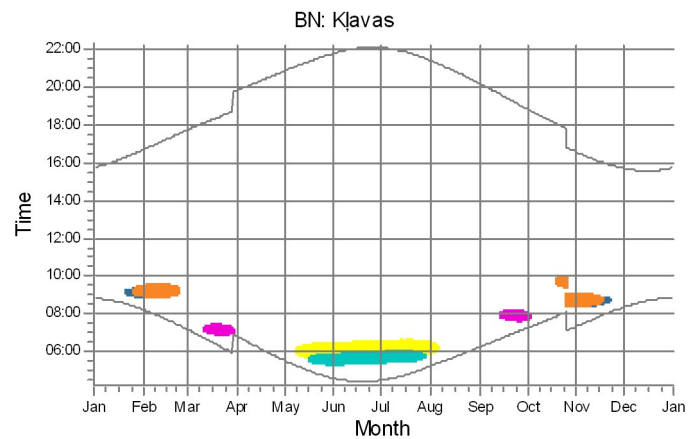
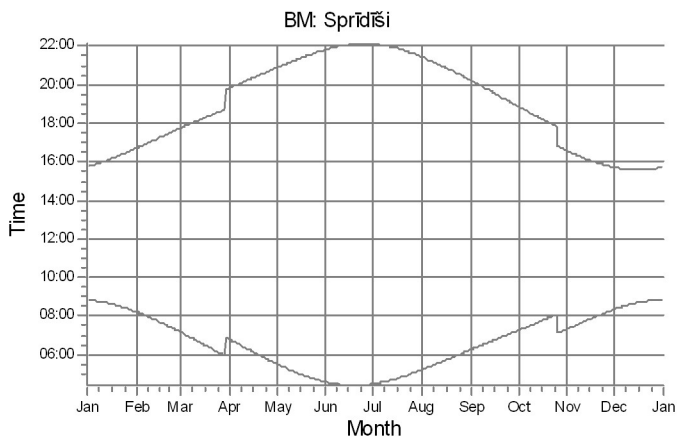
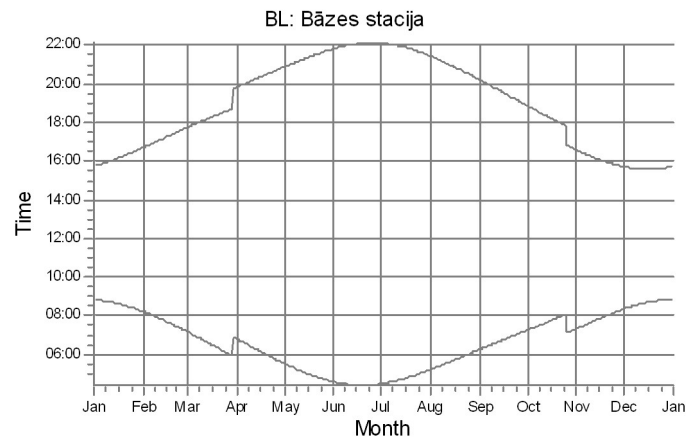
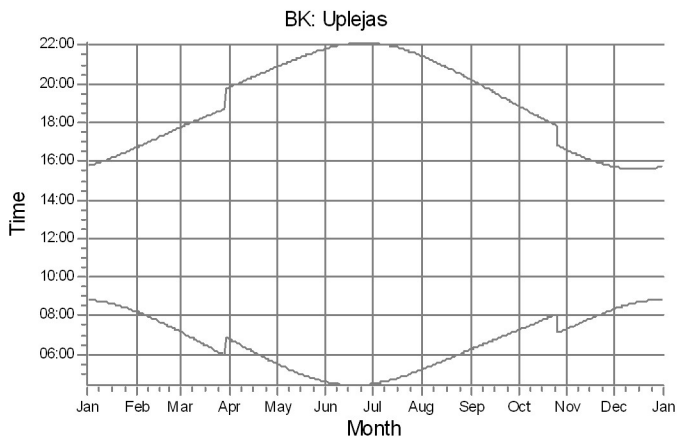
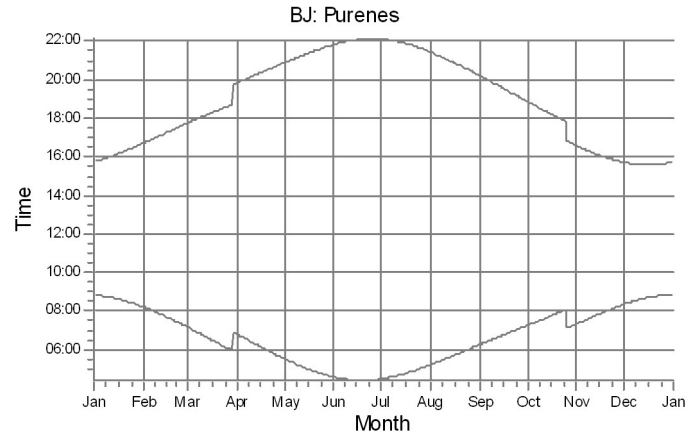
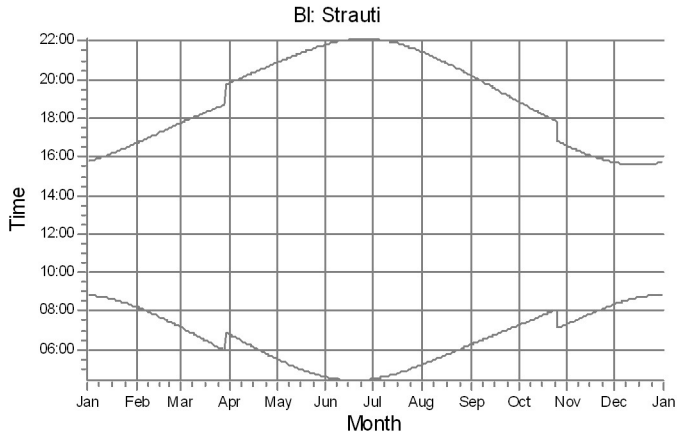


WTGs

1: 1 19: 03-A

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case



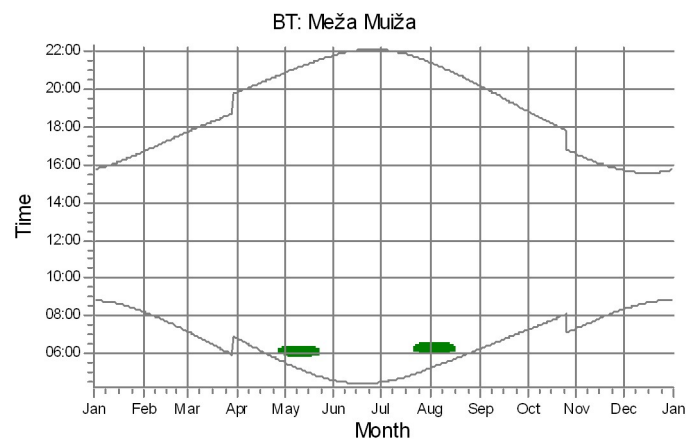
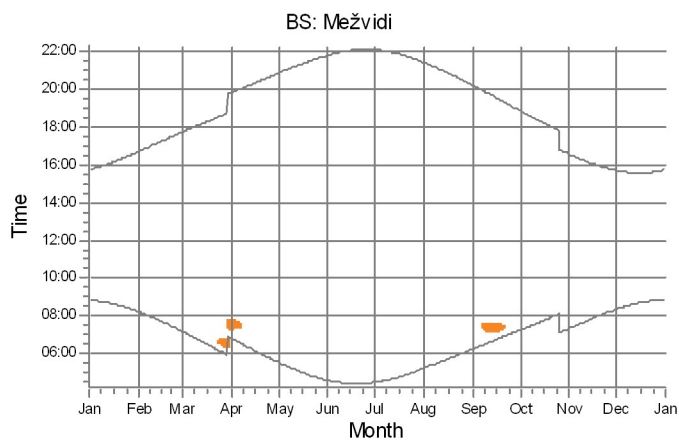
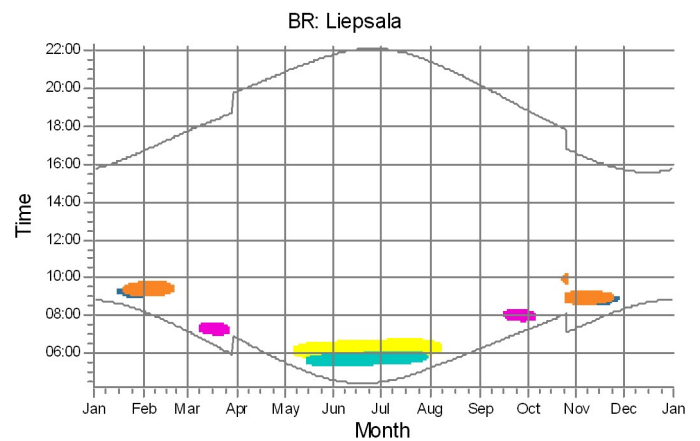
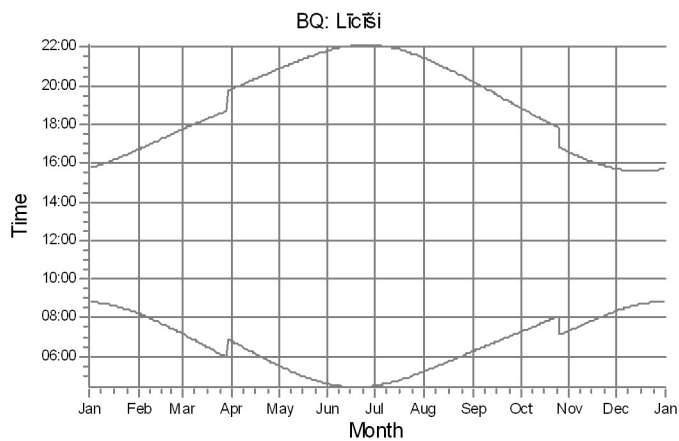
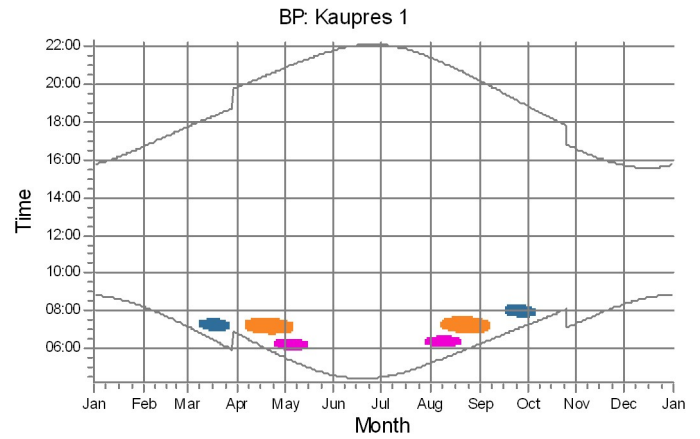
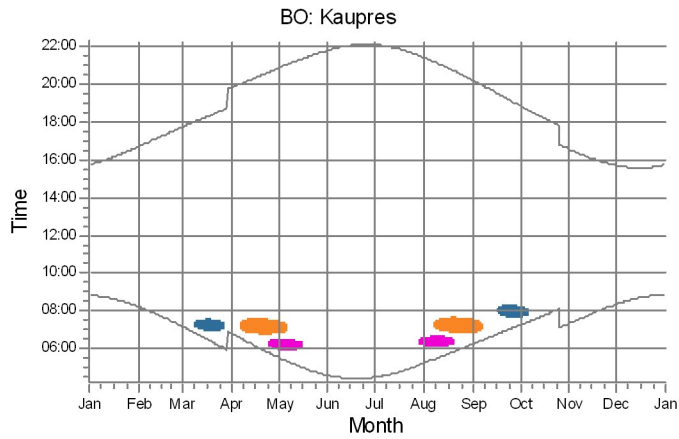
WTGs





## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

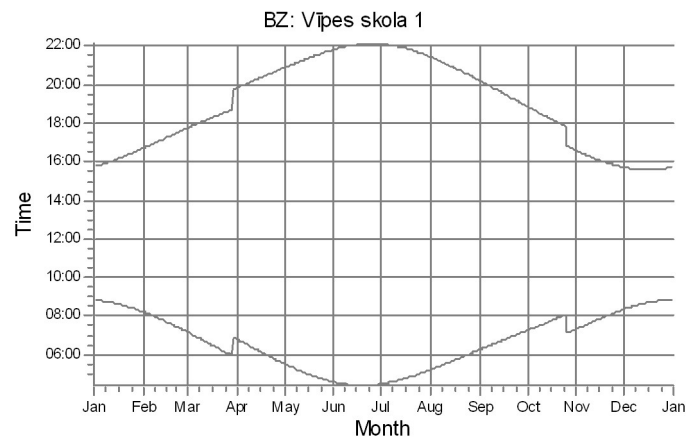
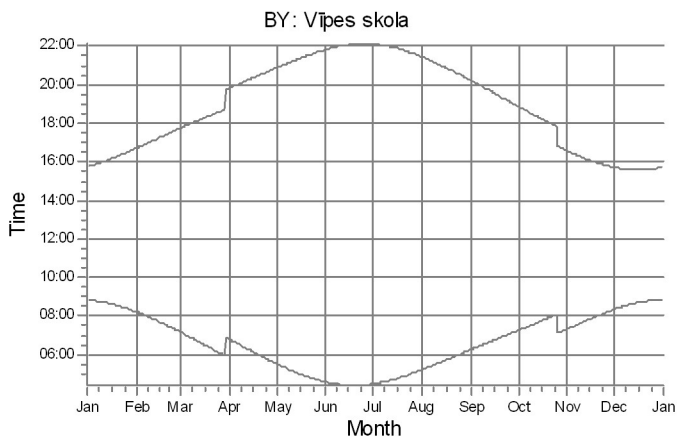
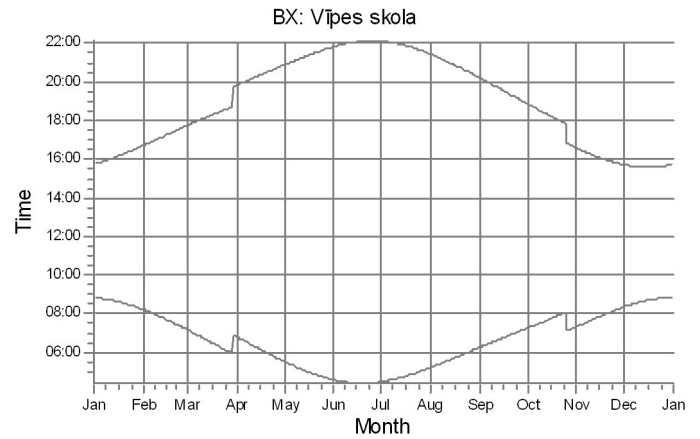
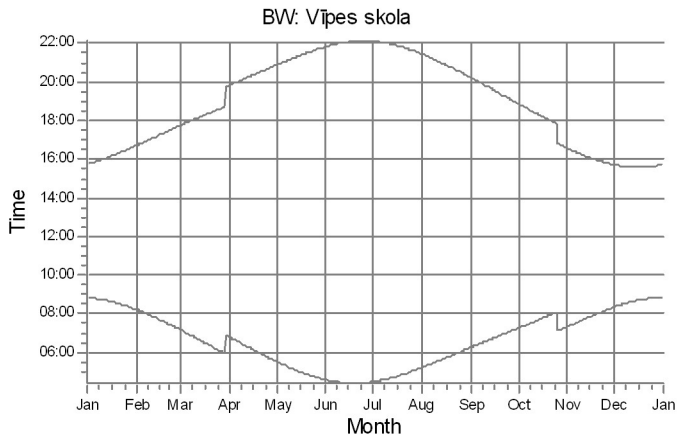
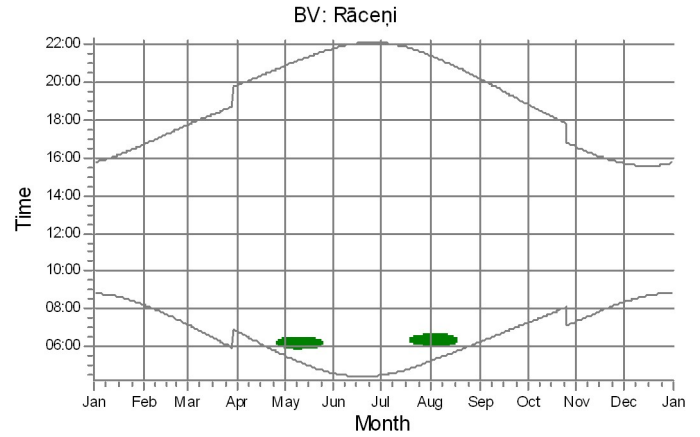
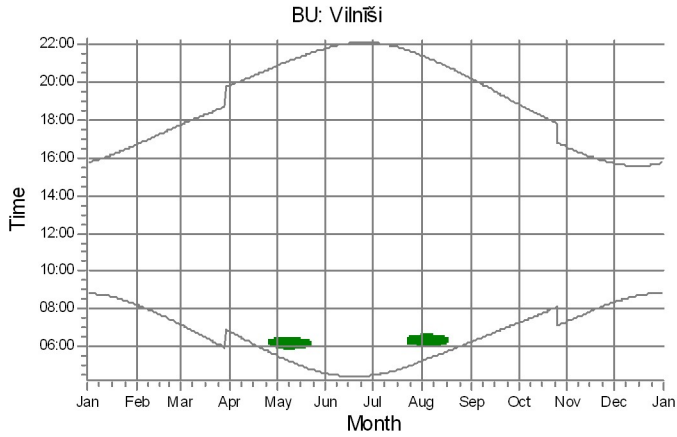


### WTGs

|                                                                                     |      |                                                                                     |          |                                                                                     |          |
|-------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|----------|
|  | 1: 1 |  | 21: 06-A |  | 23: 32-C |
|  | 2: 2 |  | 22: 31-C |  | 24: 33-C |

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

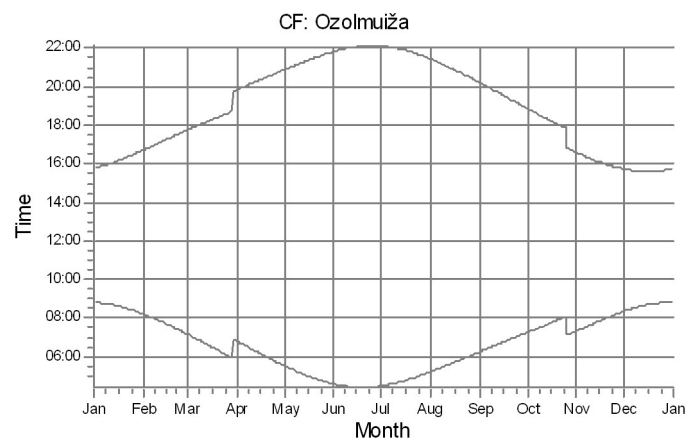
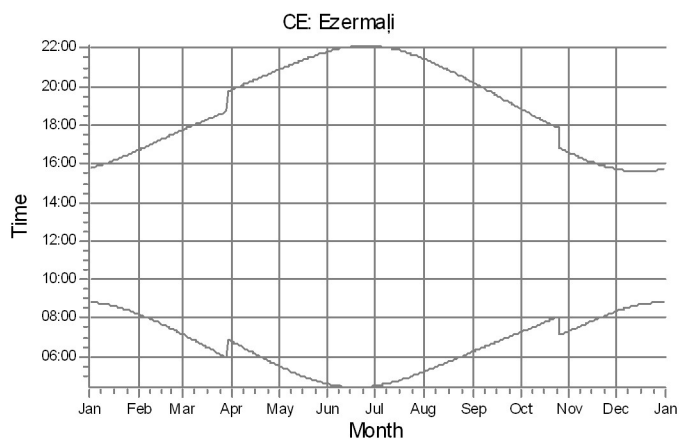
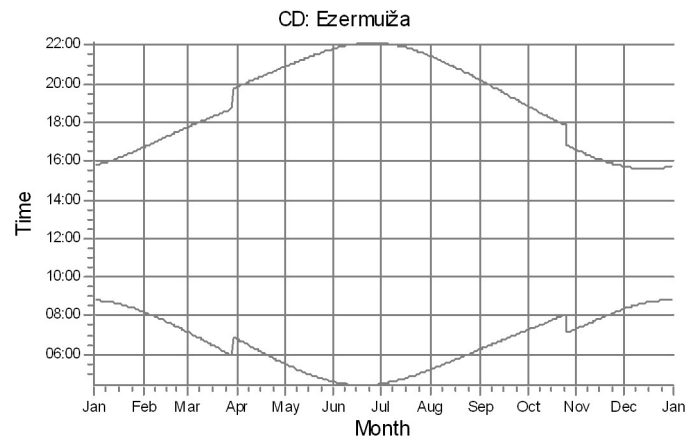
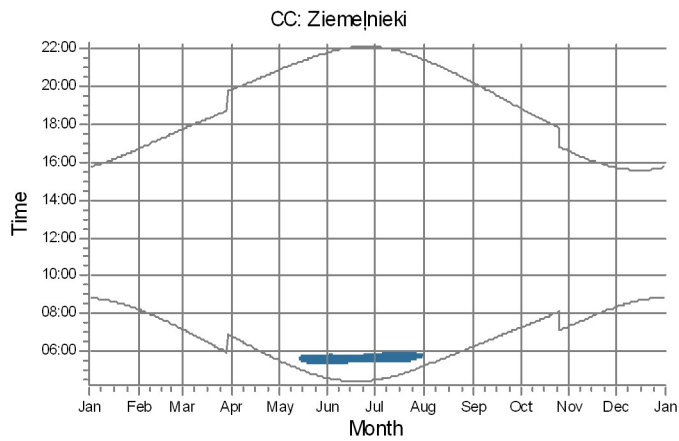
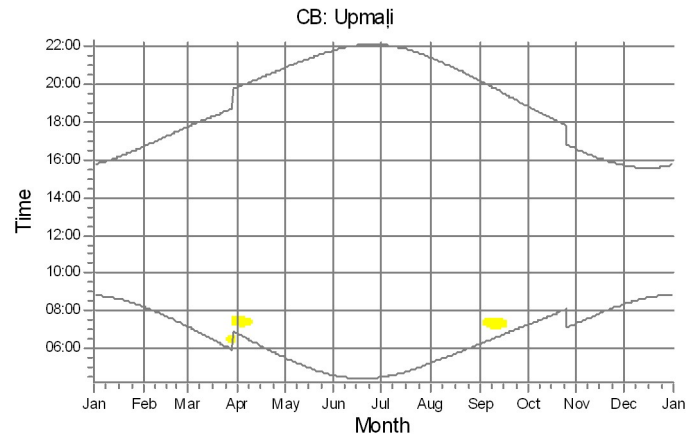
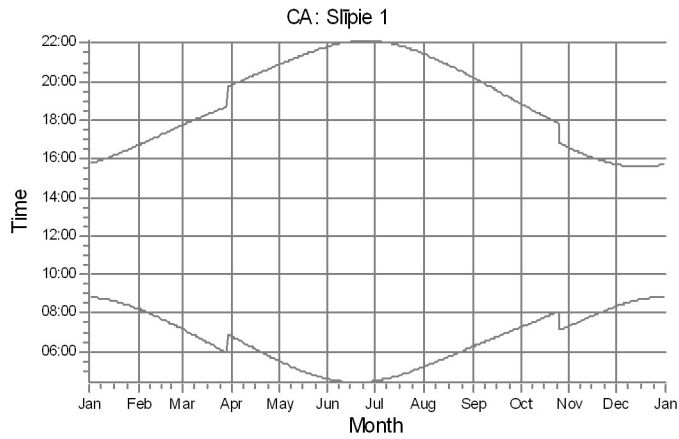


WTGs

1: 1

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

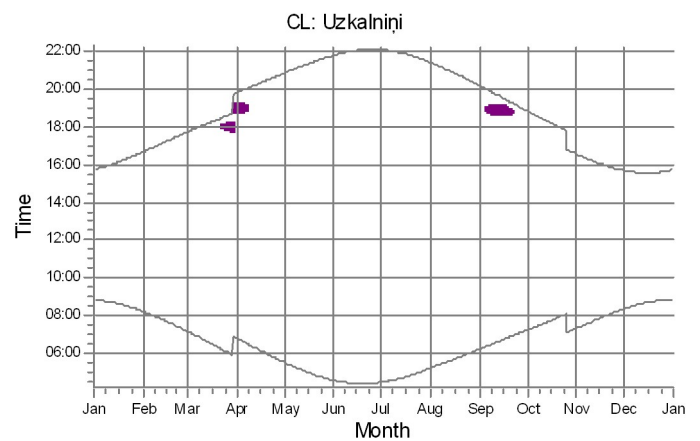
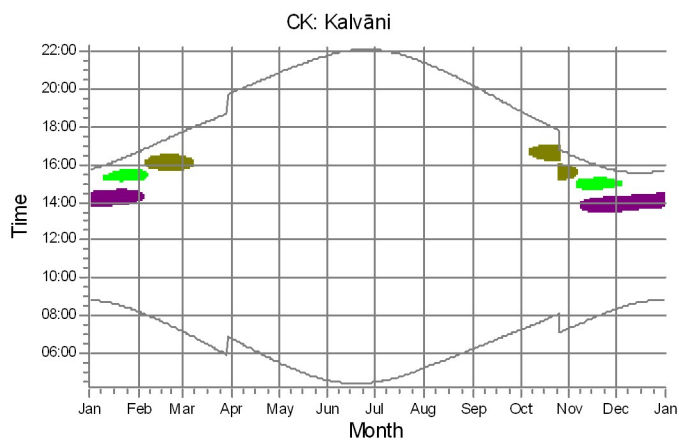
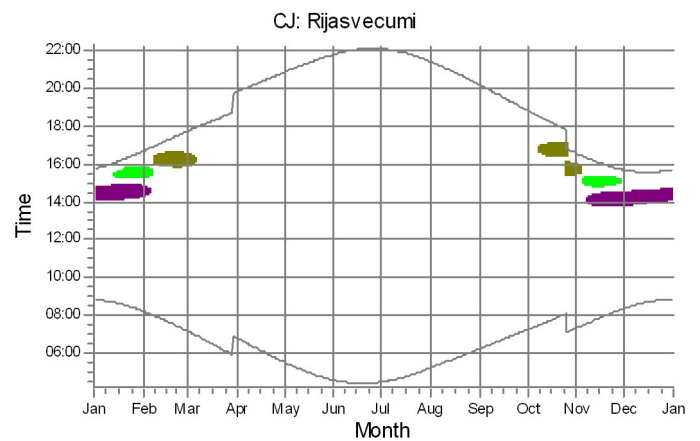
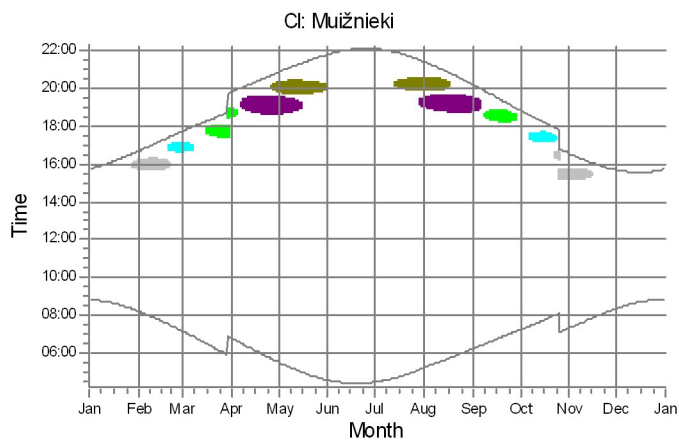
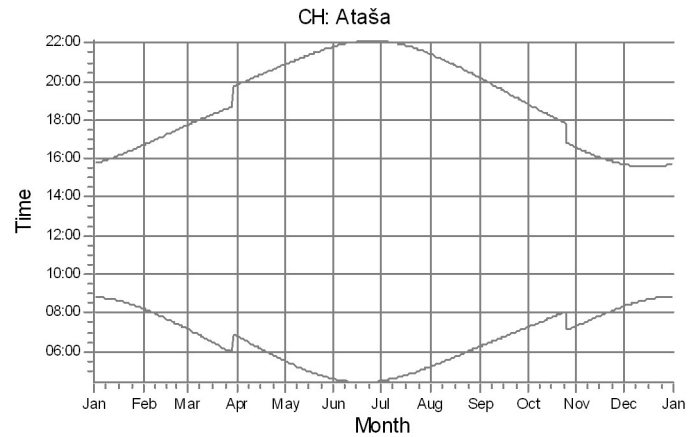
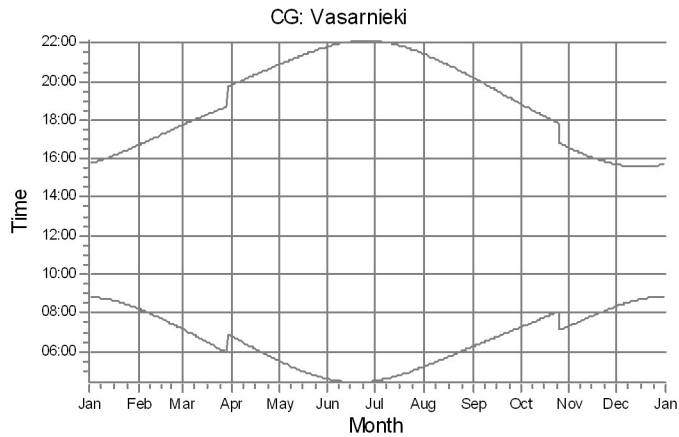


WTGs

2: 2 22: 31-C

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

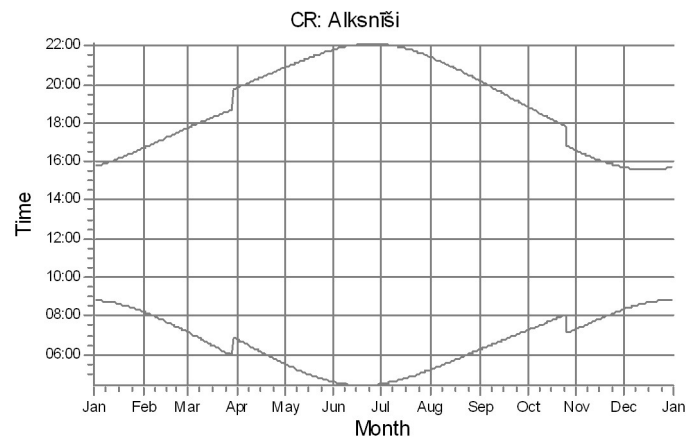
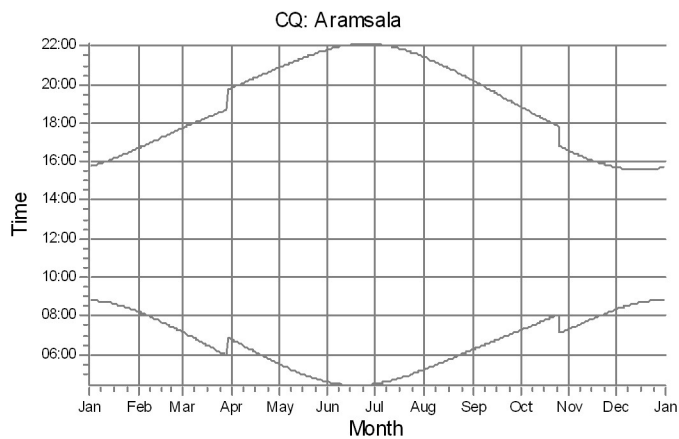
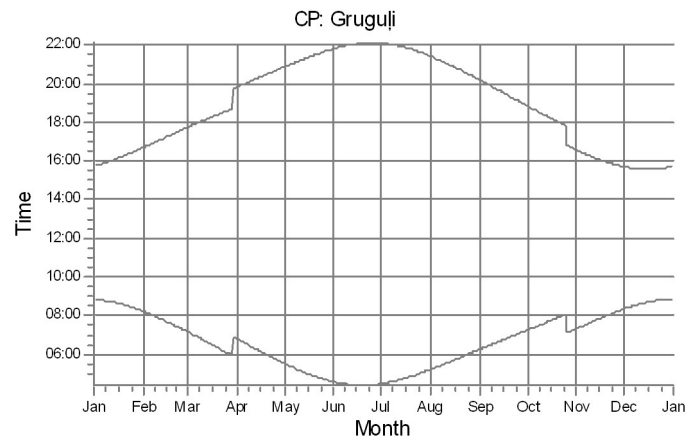
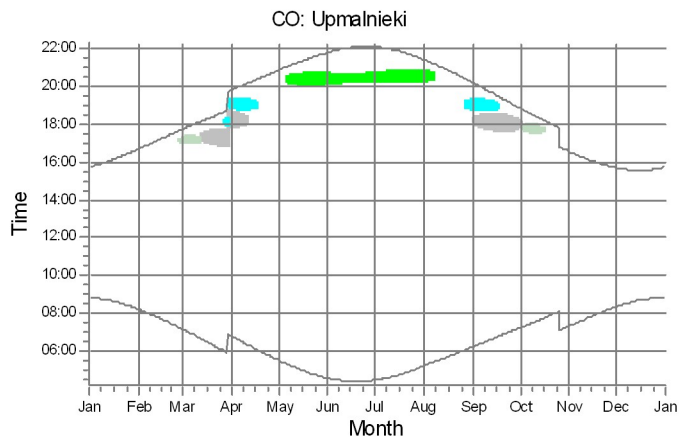
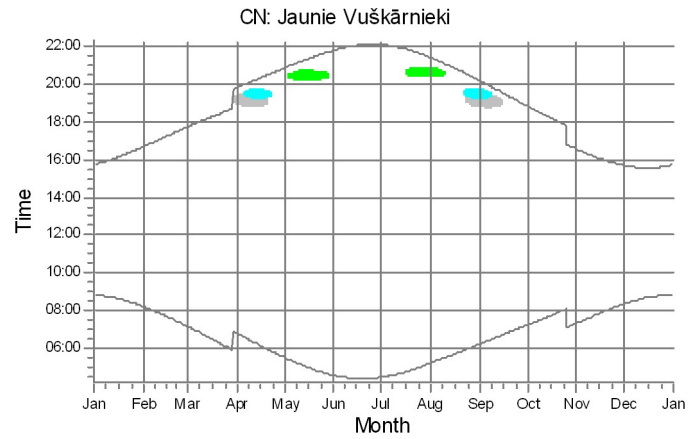
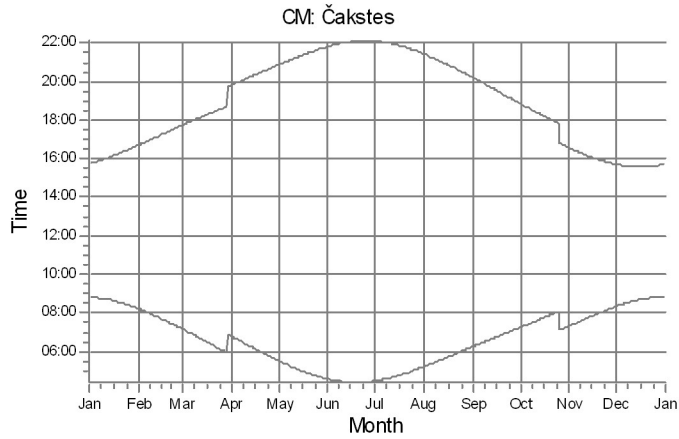


WTGs



## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

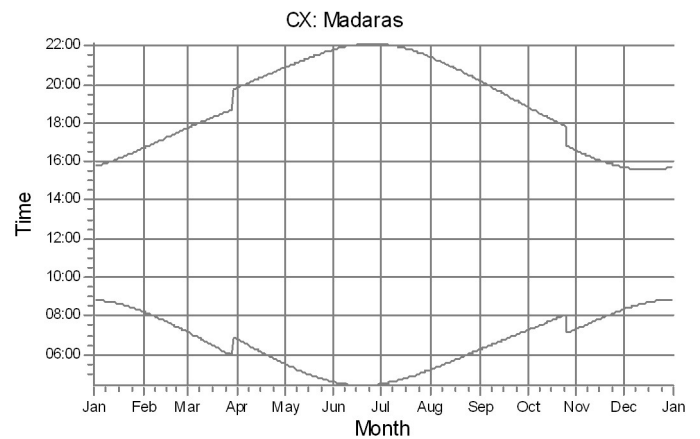
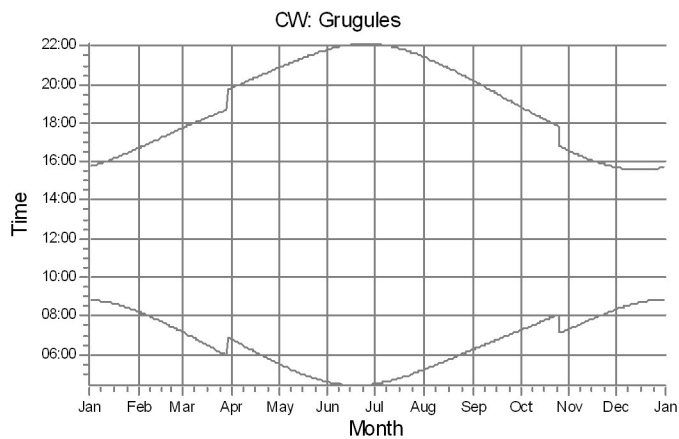
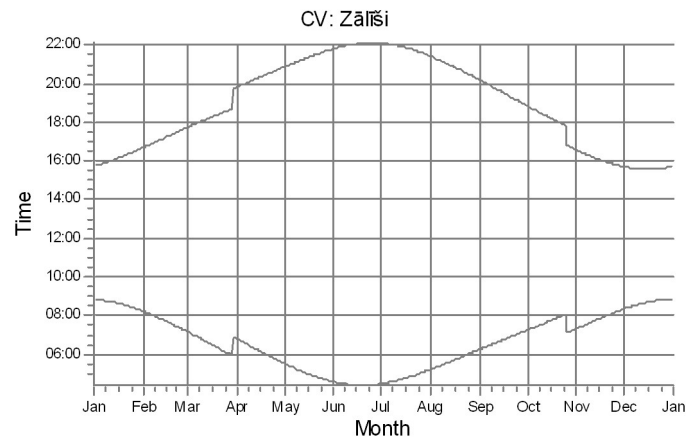
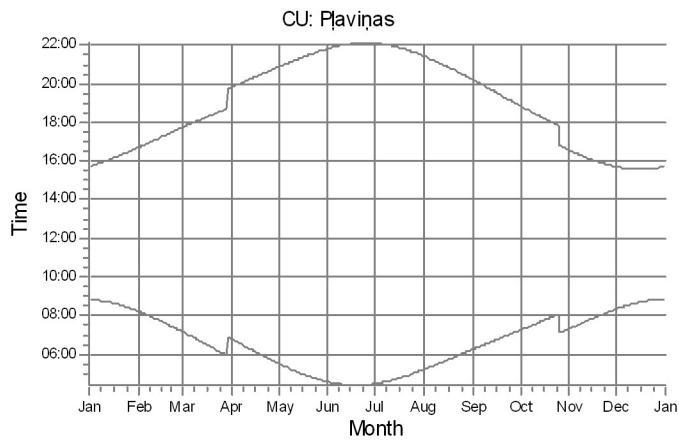
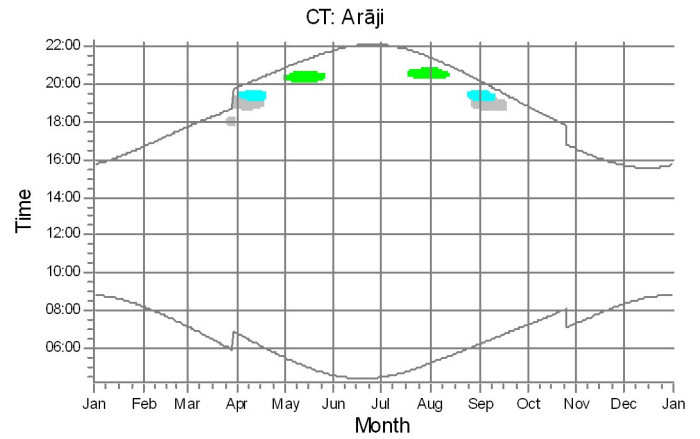
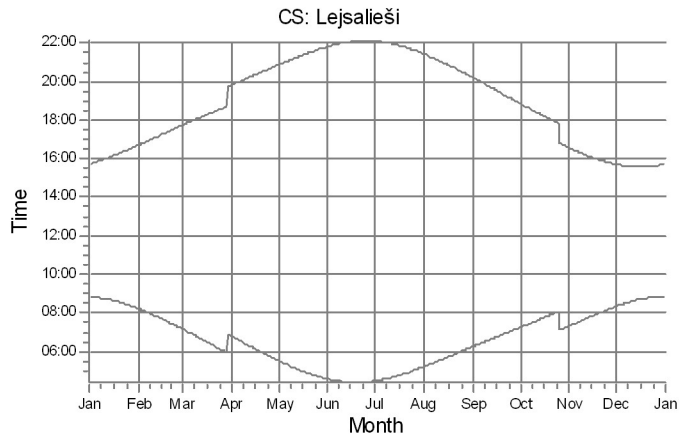


WTGs



## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case



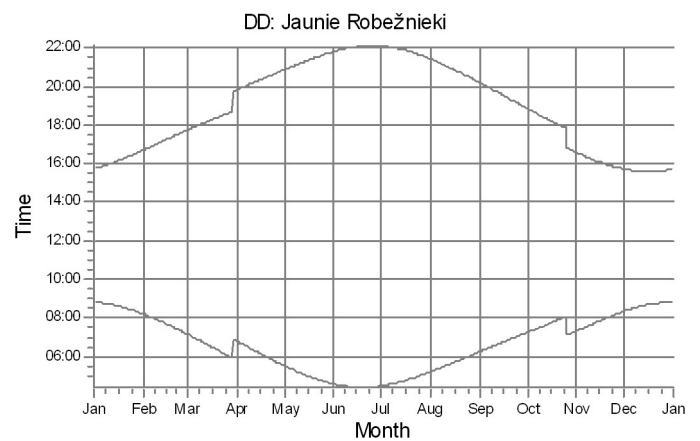
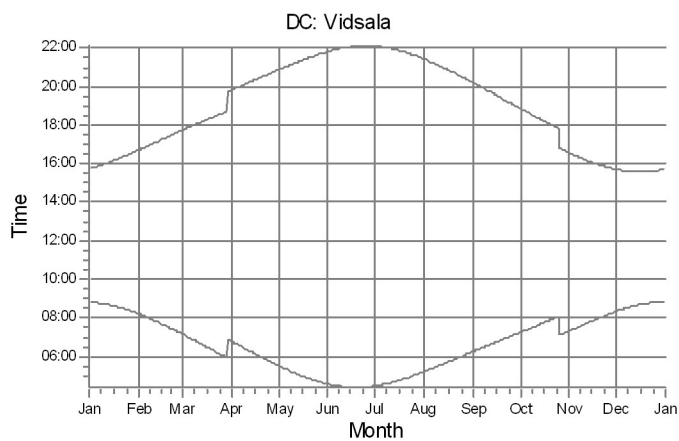
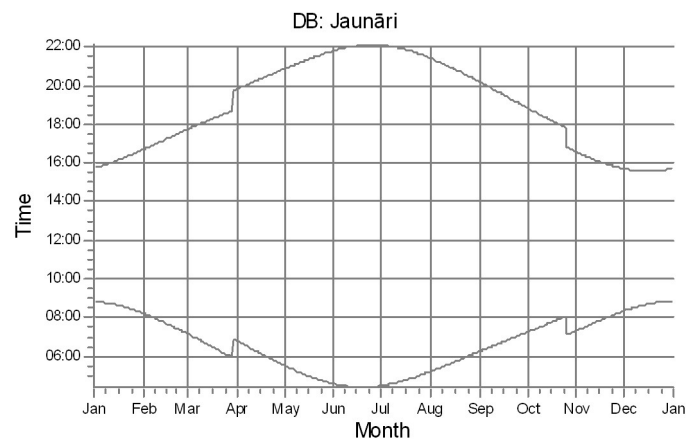
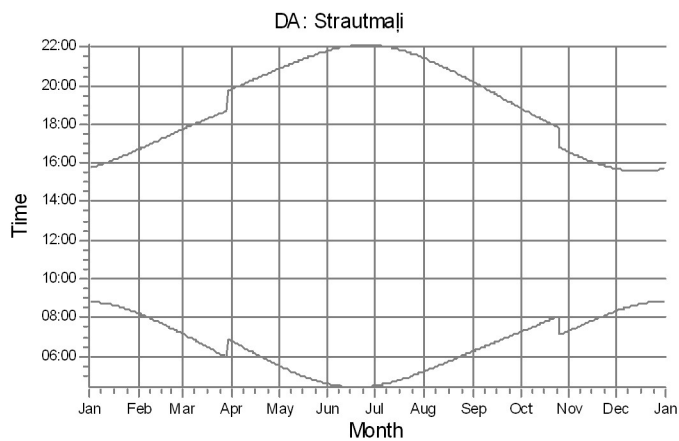
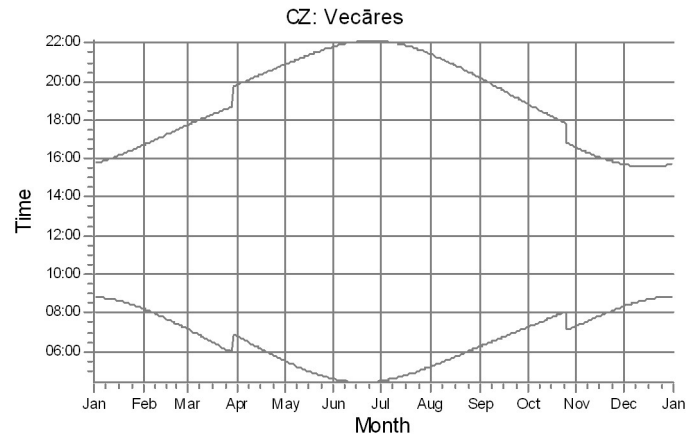
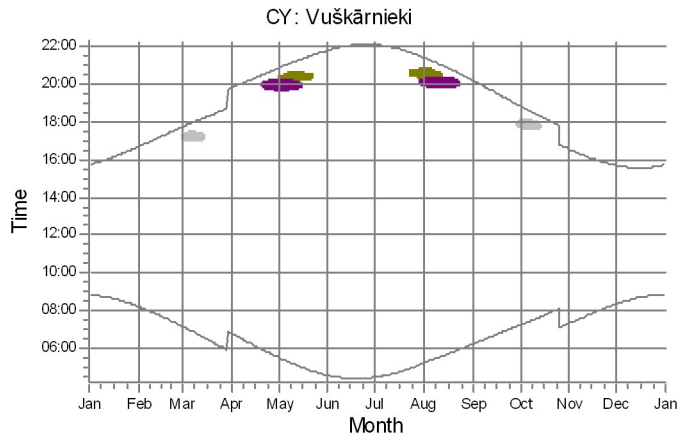
WTGs

9: 24 12: 20-A 13: 19-A



## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case

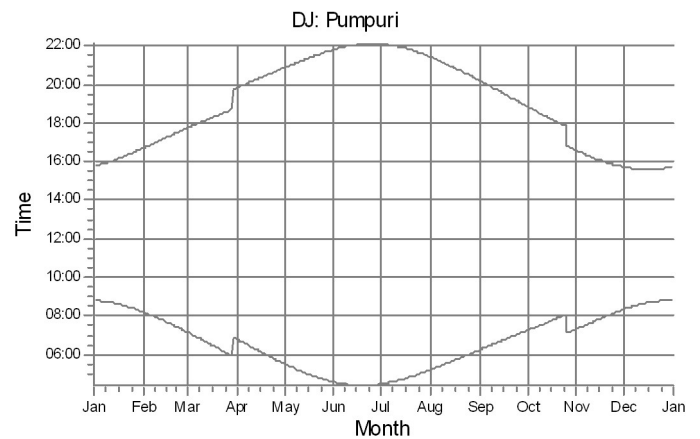
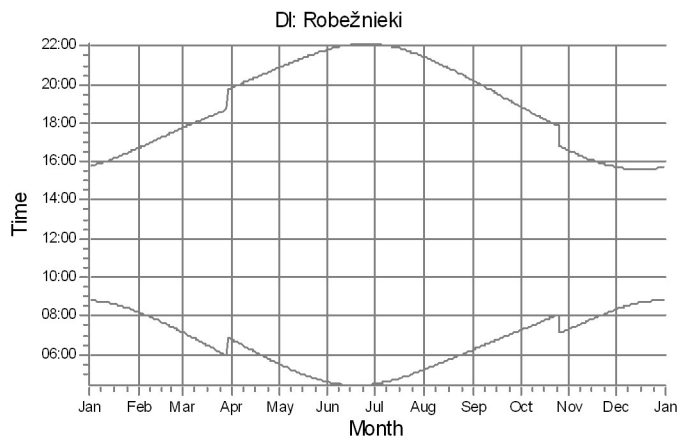
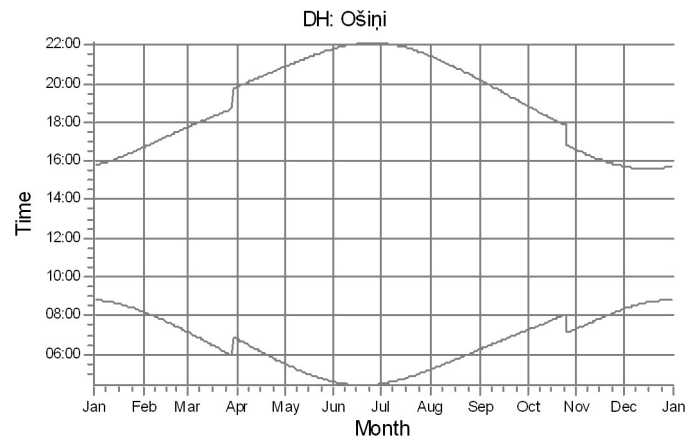
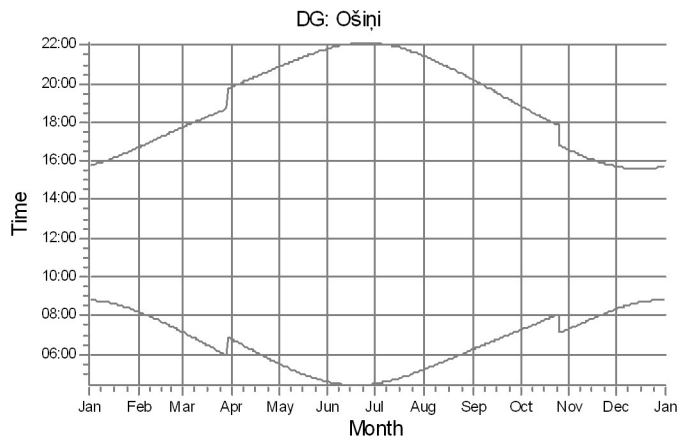
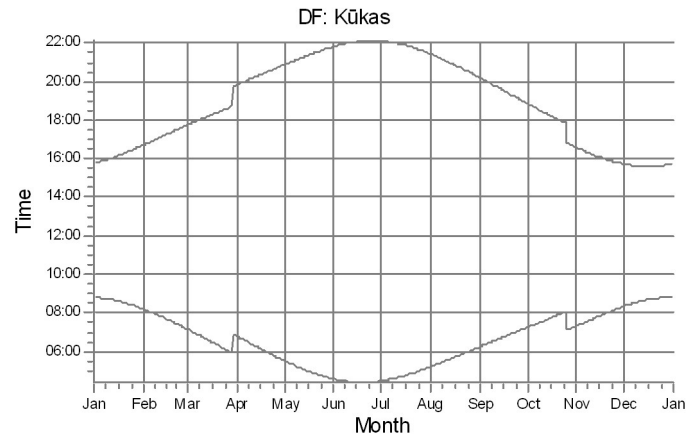
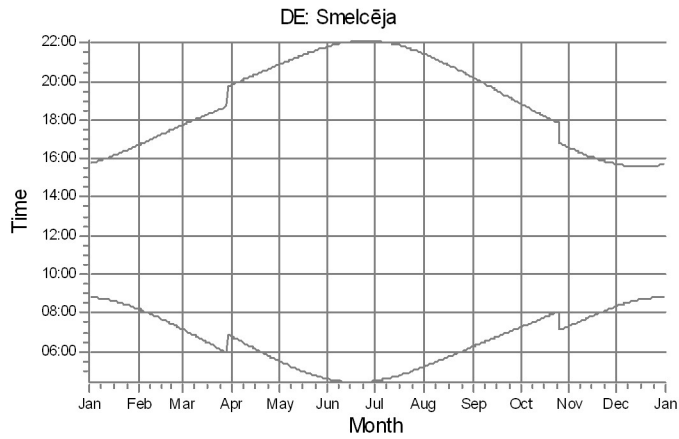


WTGs



## SHADOW - Calendar, graphical

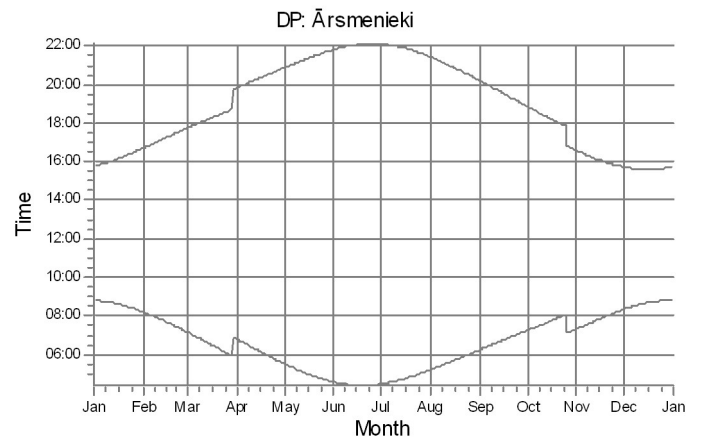
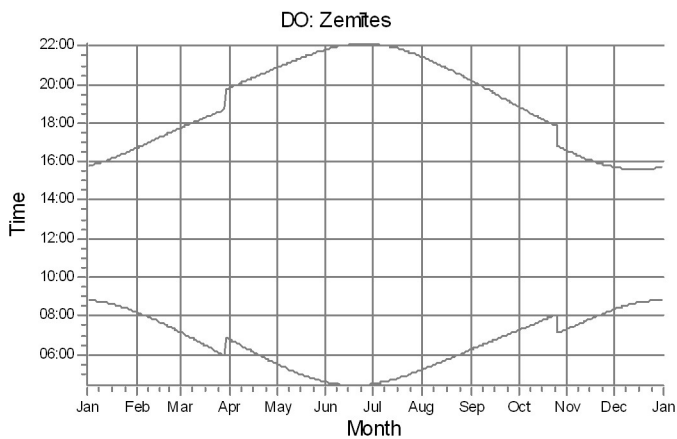
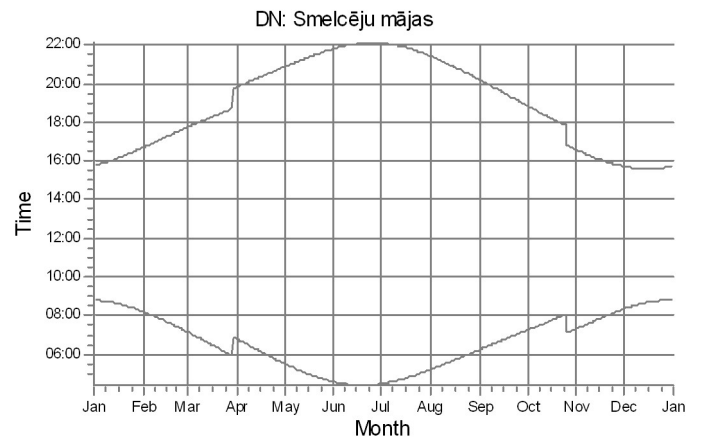
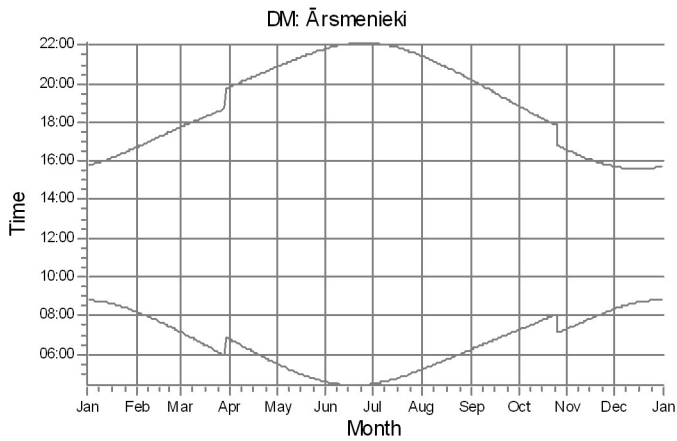
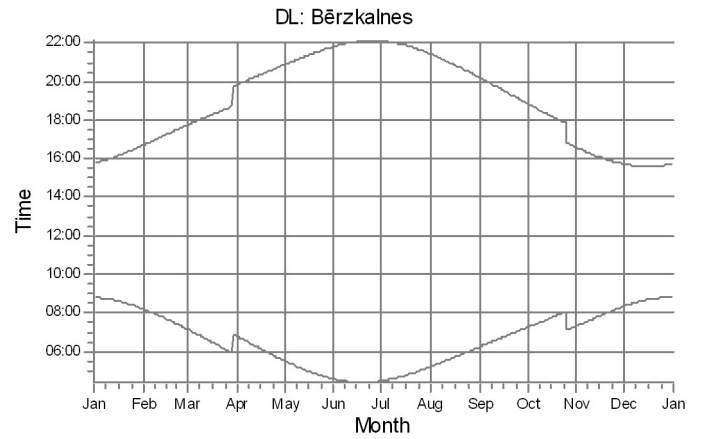
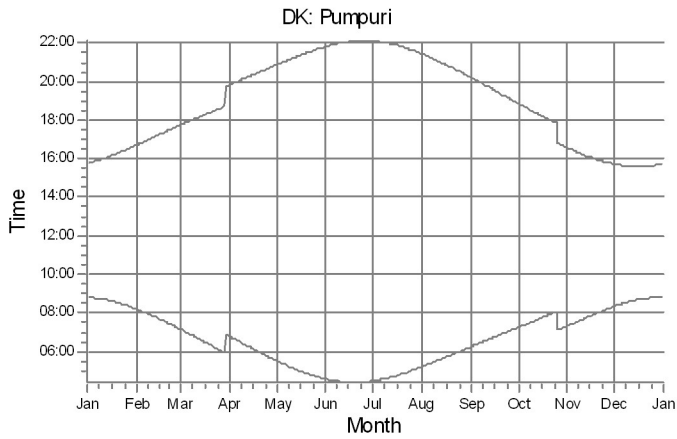
Calculation: Alternative - Worst & Real case



WTGs

## SHADOW - Calendar, graphical

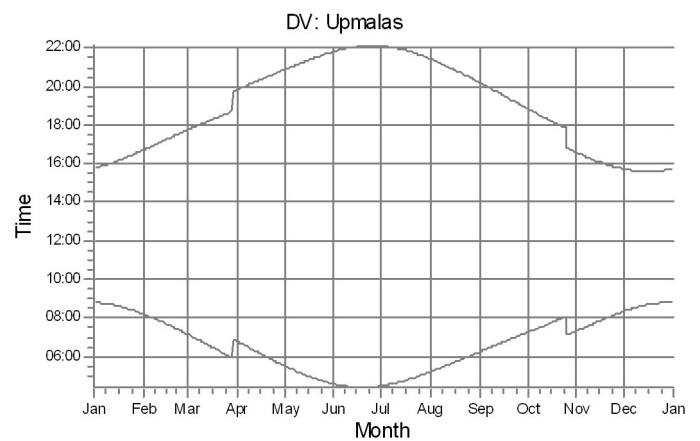
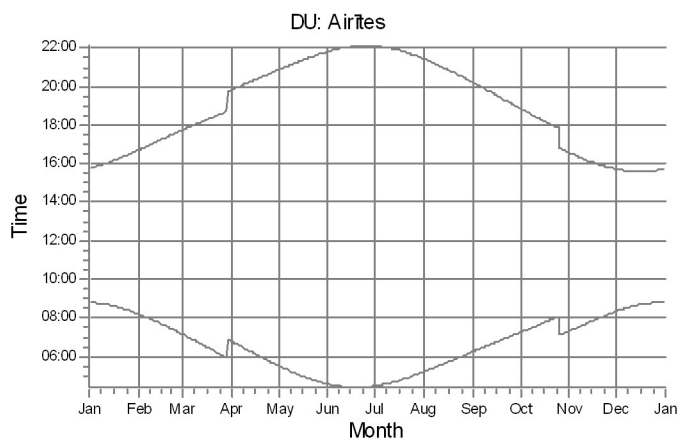
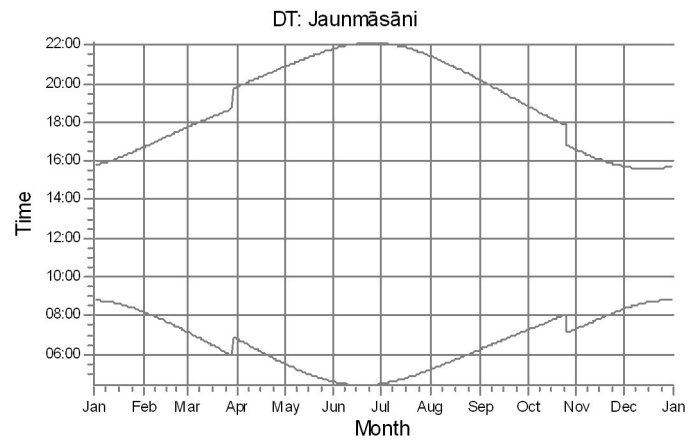
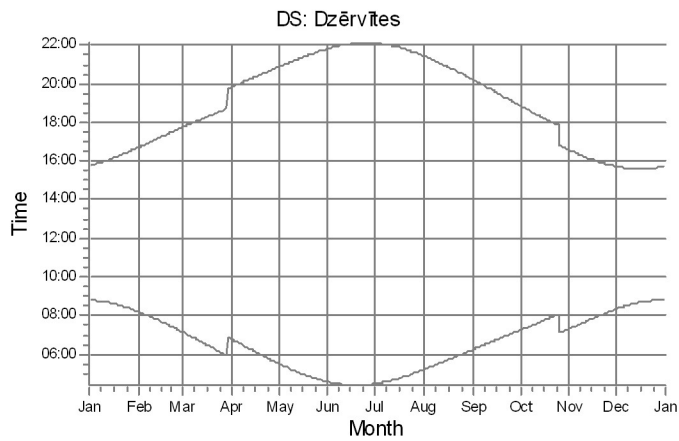
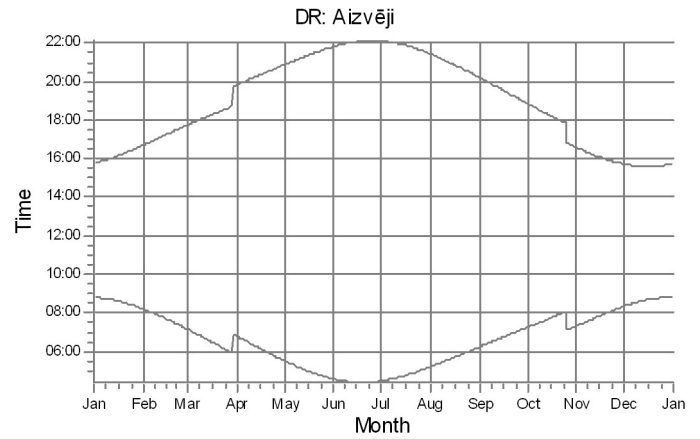
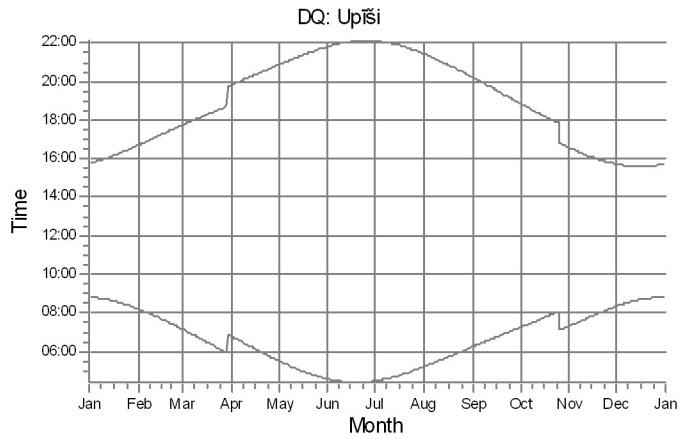
Calculation: Alternative - Worst & Real case



WTGs

## SHADOW - Calendar, graphical

Calculation: Alternative - Worst & Real case



WTGs

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 1 - 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January |                |       | February |       |                | March |                |       | April          |  |  | May |  |  | June |  |  |
|-----------------------------|---------|----------------|-------|----------|-------|----------------|-------|----------------|-------|----------------|--|--|-----|--|--|------|--|--|
| 1                           | 08:48   | 09:36-10:05/29 | 08:13 | 07:09    | 06:47 | 07:16-08:02/46 | 05:31 | 06:01-06:23/22 | 04:34 | 05:53-06:07/14 |  |  |     |  |  |      |  |  |
|                             | 15:45   | 11:14-11:27/13 | 16:42 | 17:44    | 19:50 |                | 20:52 |                | 21:50 |                |  |  |     |  |  |      |  |  |
| 2                           | 08:48   | 09:37-10:06/29 | 08:11 | 07:06    | 06:44 | 07:16-07:58/42 | 05:28 | 05:59-06:24/25 | 04:32 | 05:54-06:06/12 |  |  |     |  |  |      |  |  |
|                             | 15:46   | 11:16-11:27/11 | 16:44 | 17:46    | 19:52 |                | 20:54 |                | 21:51 |                |  |  |     |  |  |      |  |  |
| 3                           | 08:48   | 09:37-10:06/29 | 08:09 | 07:04    | 06:42 | 07:15-07:55/40 | 05:26 | 05:56-06:24/28 | 04:31 | 05:57-06:05/8  |  |  |     |  |  |      |  |  |
|                             | 15:48   | 11:17-11:25/8  | 16:46 | 17:49    | 19:54 |                | 20:56 |                | 21:52 |                |  |  |     |  |  |      |  |  |
| 4                           | 08:47   | 09:38-10:07/29 | 08:07 | 07:01    | 06:39 | 07:16-07:55/39 | 05:24 | 05:54-06:25/31 | 04:30 | 05:59-06:03/4  |  |  |     |  |  |      |  |  |
|                             | 15:49   | 11:21-11:23/2  | 16:49 | 17:51    | 19:56 |                | 20:58 |                | 21:54 |                |  |  |     |  |  |      |  |  |
| 5                           | 08:47   | 09:38-10:07/29 | 08:05 | 06:59    | 06:36 | 07:15-07:53/38 | 05:21 | 05:52-06:25/33 | 04:29 |                |  |  |     |  |  |      |  |  |
|                             | 15:50   |                | 16:51 | 17:53    | 19:58 |                | 21:00 |                | 21:55 |                |  |  |     |  |  |      |  |  |
| 6                           | 08:46   | 09:38-10:08/30 | 08:03 | 06:56    | 06:34 | 07:15-07:51/36 | 05:19 | 05:50-06:25/35 | 04:28 |                |  |  |     |  |  |      |  |  |
|                             | 15:52   |                | 16:53 | 17:55    | 20:00 |                | 21:03 |                | 21:56 |                |  |  |     |  |  |      |  |  |
| 7                           | 08:46   | 09:38-10:08/30 | 08:01 | 06:53    | 06:31 | 07:16-07:49/33 | 05:17 | 05:48-06:25/37 | 04:28 |                |  |  |     |  |  |      |  |  |
|                             | 15:53   |                | 16:55 | 17:57    | 20:02 |                | 21:05 |                | 21:57 |                |  |  |     |  |  |      |  |  |
| 8                           | 08:45   | 09:38-10:09/31 | 07:58 | 06:51    | 06:28 | 07:17-07:45/28 | 05:15 | 05:46-06:26/40 | 04:27 |                |  |  |     |  |  |      |  |  |
|                             | 15:55   |                | 16:58 | 17:59    | 20:04 |                | 21:07 |                | 21:58 |                |  |  |     |  |  |      |  |  |
| 9                           | 08:44   | 09:38-10:09/31 | 07:56 | 06:48    | 06:26 | 07:18-07:40/22 | 05:13 | 05:45-06:25/40 | 04:26 |                |  |  |     |  |  |      |  |  |
|                             | 15:56   |                | 17:00 | 18:02    | 20:06 |                | 21:09 |                | 21:59 |                |  |  |     |  |  |      |  |  |
| 10                          | 08:44   | 09:39-10:10/31 | 07:54 | 06:46    | 06:23 | 07:19-07:38/19 | 05:11 | 05:45-06:25/40 | 04:25 |                |  |  |     |  |  |      |  |  |
|                             | 15:58   |                | 17:02 | 18:04    | 20:08 |                | 21:11 |                | 22:00 |                |  |  |     |  |  |      |  |  |
| 11                          | 08:43   | 09:39-10:10/31 | 07:52 | 06:43    | 06:20 | 07:20-07:36/16 | 05:08 | 05:45-06:26/41 | 04:25 |                |  |  |     |  |  |      |  |  |
|                             | 16:00   |                | 17:04 | 18:06    | 20:11 |                | 21:13 |                | 22:01 |                |  |  |     |  |  |      |  |  |
| 12                          | 08:42   | 09:40-10:11/31 | 07:50 | 06:40    | 06:18 | 07:23-07:33/10 | 05:06 | 05:45-06:26/41 | 04:24 |                |  |  |     |  |  |      |  |  |
|                             | 16:01   |                | 17:07 | 18:08    | 20:13 |                | 21:15 |                | 22:02 |                |  |  |     |  |  |      |  |  |
| 13                          | 08:41   | 09:40-10:12/32 | 07:48 | 06:38    | 06:15 |                | 05:04 | 05:44-06:25/41 | 04:24 |                |  |  |     |  |  |      |  |  |
|                             | 16:03   |                | 17:09 | 18:10    | 20:15 |                | 21:17 |                | 22:03 |                |  |  |     |  |  |      |  |  |
| 14                          | 08:40   | 09:40-10:11/31 | 07:45 | 06:35    | 06:13 |                | 05:02 | 05:44-06:24/40 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:05   |                | 17:11 | 18:12    | 20:17 |                | 21:18 |                | 22:04 |                |  |  |     |  |  |      |  |  |
| 15                          | 08:39   | 09:41-10:12/31 | 07:43 | 06:32    | 06:10 |                | 05:00 | 05:44-06:24/40 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:07   |                | 17:13 | 18:14    | 20:19 |                | 21:20 |                | 22:05 |                |  |  |     |  |  |      |  |  |
| 16                          | 08:38   | 09:42-10:13/31 | 07:41 | 06:30    | 06:07 |                | 04:59 | 05:44-06:24/40 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:09   |                | 17:16 | 18:16    | 20:21 |                | 21:22 |                | 22:05 |                |  |  |     |  |  |      |  |  |
| 17                          | 08:36   | 09:42-10:12/30 | 07:38 | 06:27    | 06:05 |                | 04:57 | 05:44-06:23/39 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:11   |                | 17:18 | 18:18    | 20:23 |                | 21:24 |                | 22:06 |                |  |  |     |  |  |      |  |  |
| 18                          | 08:35   | 09:42-10:12/30 | 07:36 | 06:24    | 06:02 |                | 04:55 | 05:44-06:22/38 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:12   |                | 17:20 | 18:21    | 20:25 |                | 21:26 |                | 22:06 |                |  |  |     |  |  |      |  |  |
| 19                          | 08:34   | 09:43-10:13/30 | 07:34 | 06:22    | 06:00 |                | 04:53 | 05:45-06:22/37 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:14   |                | 17:22 | 18:23    | 20:27 |                | 21:28 |                | 22:07 |                |  |  |     |  |  |      |  |  |
| 20                          | 08:33   | 09:43-10:13/30 | 07:31 | 06:19    | 05:57 |                | 04:51 | 05:45-06:20/35 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:16   |                | 17:24 | 18:25    | 20:29 |                | 21:30 |                | 22:07 |                |  |  |     |  |  |      |  |  |
| 21                          | 08:31   | 09:45-10:13/28 | 07:29 | 06:16    | 05:55 |                | 04:50 | 05:46-06:19/33 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:18   |                | 17:27 | 18:27    | 20:31 |                | 21:32 |                | 22:07 |                |  |  |     |  |  |      |  |  |
| 22                          | 08:30   | 09:45-10:13/28 | 07:26 | 06:14    | 05:52 |                | 04:48 | 05:45-06:18/33 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:20   |                | 17:29 | 18:29    | 20:33 |                | 21:33 |                | 22:08 |                |  |  |     |  |  |      |  |  |
| 23                          | 08:28   | 09:46-10:12/26 | 07:24 | 06:11    | 05:50 |                | 04:46 | 05:46-06:16/30 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:23   |                | 17:31 | 18:31    | 20:36 |                | 21:35 |                | 22:08 |                |  |  |     |  |  |      |  |  |
| 24                          | 08:27   | 09:46-10:12/26 | 07:21 | 06:08    | 05:47 |                | 04:45 | 05:47-06:13/26 | 04:23 |                |  |  |     |  |  |      |  |  |
|                             | 16:25   |                | 17:33 | 18:33    | 20:38 |                | 21:37 |                | 22:08 |                |  |  |     |  |  |      |  |  |
| 25                          | 08:25   | 09:47-10:11/24 | 07:19 | 06:06    | 05:45 |                | 04:43 | 05:47-06:12/25 | 04:24 |                |  |  |     |  |  |      |  |  |
|                             | 16:27   |                | 17:35 | 18:35    | 20:40 |                | 21:39 |                | 22:08 |                |  |  |     |  |  |      |  |  |
| 26                          | 08:23   | 09:49-10:10/21 | 07:16 | 06:03    | 05:42 |                | 04:42 | 05:48-06:12/24 | 04:24 |                |  |  |     |  |  |      |  |  |
|                             | 16:29   |                | 17:38 | 18:37    | 20:42 |                | 21:40 |                | 22:08 |                |  |  |     |  |  |      |  |  |
| 27                          | 08:22   | 09:50-10:09/19 | 07:14 | 06:00    | 05:40 |                | 04:40 | 05:49-06:11/22 | 04:25 |                |  |  |     |  |  |      |  |  |
|                             | 16:31   |                | 17:40 | 18:39    | 20:44 |                | 21:42 |                | 22:08 |                |  |  |     |  |  |      |  |  |
| 28                          | 08:20   | 09:52-10:07/15 | 07:11 | 05:58    | 05:38 |                | 04:39 | 05:50-06:11/21 | 04:25 |                |  |  |     |  |  |      |  |  |
|                             | 16:33   |                | 17:42 | 18:41    | 20:46 |                | 21:44 |                | 22:08 |                |  |  |     |  |  |      |  |  |
| 29                          | 08:18   | 09:55-10:05/10 |       | 05:55    | 05:35 |                | 04:37 | 05:50-06:09/19 | 04:26 |                |  |  |     |  |  |      |  |  |
|                             | 16:35   |                |       | 18:44    | 20:48 |                | 21:45 |                | 22:07 |                |  |  |     |  |  |      |  |  |
| 30                          | 08:16   |                |       | 06:52    | 05:33 |                | 04:36 | 05:51-06:09/18 | 04:26 |                |  |  |     |  |  |      |  |  |
|                             | 16:38   |                |       | 19:46    | 20:50 |                | 21:47 |                | 22:07 |                |  |  |     |  |  |      |  |  |
| 31                          | 08:15   |                |       | 06:50    | 05:35 |                | 04:35 | 05:52-06:08/16 |       |                |  |  |     |  |  |      |  |  |
|                             | 16:40   |                |       | 19:48    |       |                | 21:48 |                |       |                |  |  |     |  |  |      |  |  |
| Potential sun hours         | 235     |                | 265   | 365      | 425   |                | 507   |                | 528   |                |  |  |     |  |  |      |  |  |
| Sum of minutes with flicker | 836     | 0              | 524   | 420      | 990   | 38             |       |                |       |                |  |  |     |  |  |      |  |  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 1 - 1

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | July           | August         | September      | October        | November       | December       |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                           | 04:27<br>22:07 | 05:13<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:10 | 07:16<br>18:49 | 07:22<br>16:32 | 08:23<br>15:42 |
| 3                           | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:30 | 08:24<br>15:41 |
| 4                           | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                           | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                           | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:32<br>15:37 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:31 | 07:37<br>16:17 | 08:34<br>15:37 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                          | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                          | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                          | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:38 | 07:41<br>18:18 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                          | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:13 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:44<br>15:35 |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                          | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:58 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                          | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                          | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:11 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                          | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:38 |
| 26                          | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 08:06<br>17:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                          | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 08:09<br>17:46 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                          | 05:05<br>21:34 | 06:06<br>20:23 | 07:08<br>19:00 | 08:11<br>17:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                          | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 08:13<br>17:41 | 08:18<br>15:45 | 08:48<br>15:42 |
| 30                          | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 08:15<br>17:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                          | 05:11<br>21:28 | 06:12<br>20:15 | 07:14<br>18:52 | 08:17<br>17:37 | 08:21<br>15:43 | 08:48<br>15:44 |
| Potential sun hours         | 529            | 470            | 385            | 324            | 248            | 216            |
| Sum of minutes with flicker | 614            | 484            | 899            | 0              | 458            | 1234           |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |



Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 2 - 2

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January | February | March | April | May            | June  |
|-----------------------------|---------|----------|-------|-------|----------------|-------|
| 1                           | 08:48   | 08:13    | 07:09 | 06:47 | 07:16-07:38/22 | 05:31 |
|                             | 15:45   | 16:42    | 17:44 | 19:50 | 07:48-08:05/17 | 20:52 |
| 2                           | 08:48   | 08:11    | 07:06 | 06:44 | 07:16-07:38/22 | 05:28 |
|                             | 15:46   | 16:44    | 17:46 | 19:52 | 07:51-08:03/12 | 20:54 |
| 3                           | 08:47   | 08:09    | 07:04 | 06:41 | 07:16-07:37/21 | 05:26 |
|                             | 15:48   | 16:46    | 17:49 | 19:54 |                | 20:56 |
| 4                           | 08:47   | 08:07    | 07:01 | 06:39 | 07:15-07:36/21 | 05:24 |
|                             | 15:49   | 16:49    | 17:51 | 19:56 |                | 20:58 |
| 5                           | 08:47   | 08:05    | 06:59 | 06:36 | 07:16-07:36/20 | 05:21 |
|                             | 15:50   | 16:51    | 17:53 | 19:58 |                | 21:00 |
| 6                           | 08:46   | 08:03    | 06:56 | 06:34 | 07:17-07:34/17 | 05:19 |
|                             | 15:52   | 16:53    | 17:55 | 20:00 |                | 21:02 |
| 7                           | 08:46   | 08:01    | 06:53 | 06:31 | 07:18-07:33/15 | 05:17 |
|                             | 15:53   | 16:55    | 17:57 | 20:02 |                | 21:04 |
| 8                           | 08:45   | 07:58    | 06:51 | 06:28 | 07:19-07:31/12 | 05:15 |
|                             | 15:55   | 16:58    | 17:59 | 20:04 |                | 21:06 |
| 9                           | 08:44   | 07:56    | 06:48 | 06:26 | 07:24-07:25/1  | 05:13 |
|                             | 15:56   | 17:00    | 18:01 | 20:06 |                | 21:08 |
| 10                          | 08:43   | 07:54    | 06:45 | 06:23 |                | 05:11 |
|                             | 15:58   | 17:02    | 18:04 | 20:08 |                | 21:10 |
| 11                          | 08:43   | 07:52    | 06:43 | 06:20 |                | 05:08 |
|                             | 16:00   | 17:04    | 18:06 | 20:10 |                | 21:12 |
| 12                          | 08:42   | 07:50    | 06:40 | 06:18 |                | 05:06 |
|                             | 16:01   | 17:07    | 18:08 | 20:13 |                | 21:14 |
| 13                          | 08:41   | 07:47    | 06:38 | 06:15 |                | 05:04 |
|                             | 16:03   | 17:09    | 18:10 | 20:15 |                | 21:16 |
| 14                          | 08:40   | 07:45    | 06:35 | 06:13 |                | 05:02 |
|                             | 16:05   | 17:11    | 18:12 | 20:17 |                | 21:18 |
| 15                          | 08:39   | 07:43    | 06:32 | 06:10 |                | 05:00 |
|                             | 16:07   | 17:13    | 18:14 | 20:19 |                | 21:20 |
| 16                          | 08:38   | 07:41    | 06:30 | 06:07 |                | 04:59 |
|                             | 16:09   | 17:15    | 18:16 | 20:21 |                | 21:22 |
| 17                          | 08:36   | 07:38    | 06:27 | 06:05 |                | 04:57 |
|                             | 16:10   | 17:18    | 18:18 | 20:23 |                | 21:24 |
| 18                          | 08:35   | 07:36    | 06:24 | 06:02 |                | 04:55 |
|                             | 16:12   | 17:20    | 18:20 | 20:25 |                | 21:26 |
| 19                          | 08:34   | 07:33    | 06:22 | 06:00 |                | 04:53 |
|                             | 16:14   | 17:22    | 18:23 | 20:27 |                | 21:28 |
| 20                          | 08:32   | 07:31    | 06:19 | 05:57 |                | 04:51 |
|                             | 16:16   | 17:24    | 18:25 | 20:29 |                | 21:30 |
| 21                          | 08:31   | 07:29    | 06:16 | 05:55 |                | 04:49 |
|                             | 16:18   | 17:27    | 18:27 | 20:31 |                | 21:31 |
| 22                          | 08:30   | 07:26    | 06:14 | 05:52 |                | 04:48 |
|                             | 16:20   | 17:29    | 18:29 | 20:33 |                | 21:33 |
| 23                          | 08:28   | 07:24    | 06:11 | 05:50 |                | 04:46 |
|                             | 16:23   | 17:31    | 18:31 | 20:35 |                | 21:35 |
| 24                          | 08:27   | 07:21    | 06:08 | 05:47 |                | 04:45 |
|                             | 16:25   | 17:33    | 18:33 | 20:38 |                | 21:37 |
| 25                          | 08:25   | 07:19    | 06:06 | 05:45 |                | 04:43 |
|                             | 16:27   | 17:35    | 18:35 | 20:40 |                | 21:38 |
| 26                          | 08:23   | 07:16    | 06:03 | 05:42 |                | 04:42 |
|                             | 16:29   | 17:38    | 18:37 | 20:42 |                | 21:40 |
| 27                          | 08:22   | 07:14    | 06:00 | 05:40 |                | 04:40 |
|                             | 16:31   | 17:40    | 18:39 | 20:44 |                | 21:42 |
| 28                          | 08:20   | 07:11    | 05:58 | 05:38 |                | 04:39 |
|                             | 16:33   | 17:42    | 18:41 | 20:46 |                | 21:43 |
| 29                          | 08:18   |          | 05:55 | 05:35 |                | 04:37 |
|                             | 16:35   |          | 18:43 | 20:48 |                | 21:45 |
| 30                          | 08:16   |          | 06:52 | 05:33 |                | 04:36 |
|                             | 16:38   |          | 19:46 | 20:50 |                | 21:47 |
| 31                          | 08:14   |          | 06:49 |       |                | 04:35 |
|                             | 16:40   |          | 19:48 |       |                | 21:48 |
| Potential sun hours         | 235     | 265      | 365   | 425   | 507            | 528   |
| Sum of minutes with flicker | 0       | 0        | 466   | 180   | 1063           | 1554  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 2 - 2

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | July                          | August                        | September                     | October        | November       | December       |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|----------------|----------------|
| 1                           | 04:27 05:46-06:38/52<br>22:06 | 05:13 05:59-06:35/36<br>21:26 | 06:14<br>20:12                | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                           | 04:28 05:47-06:39/52<br>22:06 | 05:14 06:01-06:34/33<br>21:24 | 06:16<br>20:09                | 07:16<br>18:49 | 07:21<br>16:32 | 08:23<br>15:42 |
| 3                           | 04:29 05:47-06:39/52<br>22:05 | 05:16 06:02-06:32/30<br>21:22 | 06:18<br>20:07                | 07:18<br>18:46 | 07:24<br>16:30 | 08:24<br>15:41 |
| 4                           | 04:30 05:47-06:39/52<br>22:05 | 05:18 06:04-06:30/26<br>21:20 | 06:20 07:19-07:26/7<br>20:04  | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                           | 04:31 05:48-06:40/52<br>22:04 | 05:20 06:08-06:28/20<br>21:17 | 06:22 07:16-07:29/13<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                           | 04:32 05:48-06:40/52<br>22:03 | 05:22 06:11-06:25/14<br>21:15 | 06:24 07:14-07:30/16<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                           | 04:33 05:48-06:40/52<br>22:03 | 05:24 06:17-06:18/1<br>21:13  | 06:26 07:12-07:31/19<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                           | 04:34 05:48-06:40/52<br>22:02 | 05:26<br>21:11                | 06:28 07:11-07:31/20<br>19:54 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                           | 04:35 05:48-06:41/53<br>22:01 | 05:28<br>21:09                | 06:30 07:09-07:31/22<br>19:51 | 07:30<br>18:31 | 07:37<br>16:17 | 08:33<br>15:37 |
| 10                          | 04:36 05:48-06:41/53<br>22:00 | 05:30<br>21:06                | 06:32 07:09-07:31/22<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                          | 04:38 05:48-06:41/53<br>21:59 | 05:32<br>21:04                | 06:34 07:08-07:31/23<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                          | 04:39 05:48-06:41/53<br>21:58 | 05:34<br>21:02                | 06:36 07:08-07:30/22<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                          | 04:40 05:48-06:40/52<br>21:57 | 05:36<br>20:59                | 06:38 07:09-07:30/21<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                          | 04:42 05:49-06:41/52<br>21:55 | 05:38<br>20:57                | 06:40 07:11-07:29/18<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                          | 04:43 05:49-06:41/52<br>21:54 | 05:40<br>20:55                | 06:42 07:13-07:27/14<br>19:35 | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                          | 04:45 05:49-06:41/52<br>21:53 | 05:42<br>20:52                | 06:44 07:15-07:26/11<br>19:32 | 07:45<br>18:12 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                          | 04:46 05:50-06:41/51<br>21:52 | 05:44<br>20:50                | 06:46 07:17-07:24/7<br>19:29  | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                          | 04:48 05:49-06:41/52<br>21:50 | 05:46<br>20:48                | 06:48 07:33-08:02/29<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                          | 04:49 05:50-06:41/51<br>21:49 | 05:48<br>20:45                | 06:50 07:33-08:02/29<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                          | 04:51 05:50-06:41/51<br>21:47 | 05:50<br>20:43                | 06:52 07:32-08:01/29<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                          | 04:53 05:51-06:41/50<br>21:46 | 05:52<br>20:40                | 06:54 07:32-08:01/29<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                          | 04:54 05:51-06:40/49<br>21:44 | 05:54<br>20:38                | 06:56 07:32-08:00/28<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                          | 04:56 05:52-06:41/49<br>21:42 | 05:56<br>20:35                | 06:58 07:33-07:59/26<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                          | 04:58 05:51-06:40/49<br>21:41 | 05:58<br>20:33                | 07:00 07:33-07:58/25<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                          | 05:00 05:52-06:40/48<br>21:39 | 06:00<br>20:30                | 07:02 07:34-07:57/23<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                          | 05:01 05:53-06:40/47<br>21:37 | 06:02<br>20:28                | 07:04 07:35-07:55/20<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                          | 05:03 05:53-06:38/45<br>21:35 | 06:04<br>20:25                | 07:06 07:37-07:53/16<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                          | 05:05 05:54-06:38/44<br>21:34 | 06:06<br>20:22                | 07:08 07:39-07:50/11<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                          | 05:07 05:56-06:38/42<br>21:32 | 06:08<br>20:20                | 07:10<br>18:57                | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                          | 05:09 05:56-06:36/40<br>21:30 | 06:10<br>20:17                | 07:12<br>18:54                | 07:15<br>16:39 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                          | 05:11 05:57-06:36/39<br>21:28 | 06:12<br>20:15                |                               | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours         | 529                           | 470                           | 385                           | 324            | 248            | 216            |
| Sum of minutes with flicker | 1543                          | 160                           | 666                           | 0              | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 3 - 10

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|-----------------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                           | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                             | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                           | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                             | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                           | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
|                             | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:22  | 20:07     | 18:46   | 16:29    | 15:41    |
| 4                           | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                             | 15:49   | 16:48    | 17:51 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                           | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                             | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                           | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                             | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                           | 08:46   | 08:00    | 06:53 | 06:31 | 05:17 | 04:27 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                             | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                           | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                             | 15:55   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                           | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:33    |
|                             | 15:56   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                          | 08:43   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                             | 15:58   | 17:02    | 18:04 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                          | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:25 | 04:38 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                             | 15:59   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                          | 08:42   | 07:50    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                             | 16:01   | 17:06    | 18:08 | 20:13 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:35    |
| 13                          | 08:41   | 07:47    | 06:38 | 06:15 | 05:04 | 04:24 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:38    |
|                             | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                          | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                             | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                          | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                             | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                          | 08:38   | 07:41    | 06:30 | 06:07 | 04:58 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                             | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                          | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                             | 16:10   | 17:18    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                          | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:22 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                             | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                          | 08:34   | 07:33    | 06:22 | 06:00 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                             | 16:14   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                          | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                             | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                          | 08:31   | 07:29    | 06:16 | 05:55 | 04:49 | 04:22 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                             | 16:18   | 17:27    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:55    | 15:36    |
| 22                          | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                             | 16:20   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:57   | 15:54    | 15:36    |
| 23                          | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                             | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                          | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                             | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                          | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:24 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:47    |
|                             | 16:27   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:38    |
| 26                          | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 08:06   | 08:12    | 08:48    |
|                             | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                          | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 08:08   | 08:14    | 08:48    |
|                             | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:40    |
| 28                          | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 08:11   | 08:16    | 08:48    |
|                             | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:34 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                          | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 08:13   | 08:17    | 08:48    |
|                             | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:41    |
| 30                          | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:26 | 05:09 | 06:10  | 07:12     | 08:15   | 08:19    | 08:48    |
|                             | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:44    | 15:42    |
| 31                          | 08:14   |          | 06:49 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                             | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours         | 235     | 265      | 365   | 425   | 507   | 529   | 529   | 470    | 385       | 324     | 248      | 216      |
| Sum of minutes with flicker | 0       | 0        | 0     | 0     | 0     | 0     | 0     | 0      | 0         | 0       | 0        | 0        |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 4 - 15

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|-----------------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                           | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                             | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:42    |
| 2                           | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                             | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                           | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
|                             | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:05 | 21:22  | 20:07     | 18:46   | 16:29    | 15:41    |
| 4                           | 08:47   | 08:07    | 07:01 | 06:39 | 05:23 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                             | 15:49   | 16:48    | 17:51 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                           | 08:47   | 08:05    | 06:58 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                             | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25    | 15:39    |
| 6                           | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                             | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                           | 08:46   | 08:00    | 06:53 | 06:31 | 05:17 | 04:27 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                             | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                           | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                             | 15:55   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19    | 15:37    |
| 9                           | 08:44   | 07:56    | 06:48 | 06:25 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:33    |
|                             | 15:56   | 17:00    | 18:01 | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                          | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                             | 15:58   | 17:02    | 18:03 | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                          | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:25 | 04:37 | 05:32  | 06:34     | 07:34   | 07:41    | 08:36    |
|                             | 15:59   | 17:04    | 18:06 | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                          | 08:42   | 07:50    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                             | 16:01   | 17:06    | 18:08 | 20:13 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:35    |
| 13                          | 08:41   | 07:47    | 06:38 | 06:15 | 05:04 | 04:24 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                             | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                          | 08:40   | 07:45    | 06:35 | 06:12 | 05:02 | 04:23 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                             | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:17   | 16:07    | 15:35    |
| 15                          | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:49    | 08:41    |
|                             | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                          | 08:38   | 07:41    | 06:30 | 06:07 | 04:58 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                             | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                          | 08:36   | 07:38    | 06:27 | 06:05 | 04:56 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                             | 16:10   | 17:18    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                          | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:22 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                             | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                          | 08:34   | 07:33    | 06:22 | 06:00 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                             | 16:14   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                          | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                             | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                          | 08:31   | 07:29    | 06:16 | 05:55 | 04:49 | 04:22 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                             | 16:18   | 17:26    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:55    | 15:36    |
| 22                          | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                             | 16:20   | 17:29    | 18:29 | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:57   | 15:54    | 15:36    |
| 23                          | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                             | 16:22   | 17:31    | 18:31 | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                          | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                             | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                          | 08:25   | 07:19    | 06:05 | 05:45 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                             | 16:27   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49    | 15:38    |
| 26                          | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 08:06   | 08:12    | 08:48    |
|                             | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                          | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 08:08   | 08:14    | 08:48    |
|                             | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:40    |
| 28                          | 08:20   | 07:11    | 05:57 | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 08:11   | 08:16    | 08:48    |
|                             | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:34 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                          | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 08:13   | 08:17    | 08:48    |
|                             | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:41    |
| 30                          | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:26 | 05:09 | 06:10  | 07:12     | 08:15   | 08:19    | 08:48    |
|                             | 16:37   |          | 19:45 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43    | 15:42    |
| 31                          | 08:14   |          | 06:49 |       | 04:35 |       | 05:10 | 06:12  |           | 07:17   |          | 08:48    |
|                             | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:43    |
| Potential sun hours         | 235     | 265      | 365   | 425   | 507   | 529   | 530   | 470    | 385       | 324     | 248      | 216      |
| Sum of minutes with flicker | 0       | 0        | 0     | 0     | 0     | 0     | 0     | 0      | 0         | 0       | 0        | 0        |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 5 - 12

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                             | [January                      | [February      | [March         | [April         | [May           | [June          | [July          | [August        | [September     | [October       | [November      | [December                     |
|-----------------------------|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------------------|
| 1                           | 08:48 10:07-10:26/19<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42                |
| 2                           | 08:48 10:08-10:27/19<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:23 10:02-10:04/2<br>15:42  |
| 3                           | 08:48 10:08-10:26/18<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:24 10:00-10:08/8<br>15:41  |
| 4                           | 08:47 10:10-10:27/17<br>15:49 | 08:07<br>16:48 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:54 | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26 09:59-10:10/11<br>15:40 |
| 5                           | 08:47 10:10-10:27/17<br>15:50 | 08:05<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28 09:58-10:11/13<br>15:39 |
| 6                           | 08:46 10:11-10:26/15<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>20:09 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29 09:57-10:12/15<br>15:38 |
| 7                           | 08:46 10:12-10:26/14<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:27<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>20:09 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31 09:57-10:13/16<br>15:38 |
| 8                           | 08:45 10:13-10:25/12<br>15:55 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>20:04 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32 09:58-10:15/17<br>15:37 |
| 9                           | 08:44 10:15-10:25/10<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:09 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>20:09 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34 09:57-10:15/18<br>15:37 |
| 10                          | 08:44 10:17-10:23/6<br>15:58  | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>20:09 | 07:32<br>18:31 | 07:39<br>16:15 | 08:35 09:58-10:16/18<br>15:36 |
| 11                          | 08:43<br>15:59                | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>20:09 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36 09:57-10:17/20<br>15:36 |
| 12                          | 08:42<br>16:01                | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>20:09 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37 09:57-10:17/20<br>15:35 |
| 13                          | 08:41<br>16:03                | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>20:09 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39 09:58-10:18/20<br>15:35 |
| 14                          | 08:40<br>16:05                | 07:45<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>20:09 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40 09:58-10:19/21<br>15:35 |
| 15                          | 08:39<br>16:07                | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>20:09 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41 09:59-10:19/20<br>15:35 |
| 16                          | 08:38<br>16:08                | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>20:09 | 07:45<br>18:12 | 07:52<br>16:04 | 08:42 09:59-10:20/21<br>15:35 |
| 17                          | 08:36<br>16:10                | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>20:09 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43 09:59-10:21/22<br>15:35 |
| 18                          | 08:35<br>16:12                | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:22<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>20:09 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43 10:00-10:21/21<br>15:35 |
| 19                          | 08:34<br>16:14                | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>20:09 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44 09:59-10:21/22<br>15:35 |
| 20                          | 08:32<br>16:16                | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>20:09 | 07:53<br>18:01 | 08:00<br>15:57 | 08:45 10:00-10:22/22<br>15:36 |
| 21                          | 08:31<br>16:18                | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>20:09 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46 10:01-10:23/22<br>15:36 |
| 22                          | 08:30<br>16:20                | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:08 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>20:09 | 07:58<br>18:00 | 08:04<br>15:54 | 08:46 10:01-10:23/22<br>15:36 |
| 23                          | 08:28<br>16:22                | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>20:09 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47 10:02-10:24/22<br>15:37 |
| 24                          | 08:27<br>16:24                | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>20:09 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47 10:02-10:24/22<br>15:38 |
| 25                          | 08:25<br>16:27                | 07:19<br>17:35 | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>20:09 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48 10:02-10:24/22<br>15:38 |
| 26                          | 08:23<br>16:29                | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>20:09 | 08:06<br>17:48 | 08:12<br>15:48 | 08:48 10:03-10:24/21<br>15:39 |
| 27                          | 08:22<br>16:31                | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>20:09 | 08:08<br>17:45 | 08:14<br>15:47 | 08:48 10:03-10:25/22<br>15:40 |
| 28                          | 08:20<br>16:33                | 07:11<br>17:42 | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:07 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>20:09 | 08:11<br>17:43 | 08:16<br>15:46 | 08:48 10:04-10:25/21<br>15:41 |
| 29                          | 08:18<br>16:35                |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>20:09 | 08:13<br>17:41 | 08:17<br>15:45 | 08:48 10:05-10:25/20<br>15:41 |
| 30                          | 08:16<br>16:37                |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>20:09 | 08:15<br>17:38 | 08:19<br>15:44 | 08:48 10:05-10:26/21<br>15:42 |
| 31                          | 08:14<br>16:40                |                | 06:49<br>19:48 |                | 04:35<br>21:48 |                | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48 10:06-10:26/20<br>15:44 |
| Potential sun hours         | 235                           | 265            | 365            | 425            | 507            | 529            | 530            | 470            | 385            | 324            | 248            | 216                           |
| Sum of minutes with flicker | 147                           | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 562                           |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 6 - 18

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January                                     | February                      | March          | April          | May            | June           |
|-----------------------------|---------------------------------------------|-------------------------------|----------------|----------------|----------------|----------------|
| 1                           | 08:48 13:57-14:30/33<br>15:45 12:48-12:50/2 | 08:13<br>16:42                | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 |
| 2                           | 08:48 13:58-14:31/33<br>15:46<br>16:44      | 08:11<br>16:44                | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 |
| 3                           | 08:48 13:58-14:31/33<br>15:47<br>16:46      | 08:09<br>16:46                | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 |
| 4                           | 08:47 14:00-14:32/32<br>15:49<br>16:48      | 08:07<br>16:48                | 07:01<br>17:51 | 06:39<br>19:56 | 05:23<br>20:58 | 04:30<br>21:54 |
| 5                           | 08:47 14:00-14:32/32<br>15:50<br>16:51      | 08:05 08:37-08:39/2<br>16:51  | 06:58<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 |
| 6                           | 08:46 14:01-14:31/30<br>15:51<br>16:53      | 08:03 08:35-08:42/7<br>16:53  | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 |
| 7                           | 08:46 14:02-14:31/29<br>15:53<br>16:55      | 08:01 08:33-08:44/11<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:27<br>21:57 |
| 8                           | 08:45 14:03-14:31/28<br>15:54<br>16:57      | 07:58 08:30-08:44/14<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 |
| 9                           | 08:44 14:05-14:31/26<br>15:56<br>17:00      | 07:56 08:28-08:45/17<br>17:00 | 06:48<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>21:59 |
| 10                          | 08:44 14:07-14:31/24<br>15:58<br>17:02      | 07:54 08:26-08:46/20<br>17:02 | 06:45<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:00 |
| 11                          | 08:43 14:14-14:31/17<br>15:59<br>17:04      | 07:52 08:24-08:46/22<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:25<br>22:01 |
| 12                          | 08:42 14:16-14:31/15<br>16:01<br>17:06      | 07:50 08:24-08:47/23<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:14 | 04:24<br>22:02 |
| 13                          | 08:41 14:17-14:30/13<br>16:03<br>17:09      | 07:47 08:24-08:46/22<br>17:09 | 06:37<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:24<br>22:03 |
| 14                          | 08:40 14:19-14:28/9<br>16:05<br>17:11       | 07:45 08:24-08:47/23<br>17:11 | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 |
| 15                          | 08:39 14:23-14:26/3<br>16:06<br>17:13       | 07:43 08:24-08:46/22<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 |
| 16                          | 08:38<br>16:08<br>17:15                     | 07:41 08:25-08:46/21<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 |
| 17                          | 08:36<br>16:10<br>17:18                     | 07:38 08:26-08:46/20<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 |
| 18                          | 08:35<br>16:12<br>17:20                     | 07:36 08:27-08:44/17<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:22<br>22:06 |
| 19                          | 08:34<br>16:14<br>17:22                     | 07:33 08:27-08:42/15<br>17:22 | 06:22<br>18:22 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 |
| 20                          | 08:32<br>16:16<br>17:24                     | 07:31 08:30-08:40/10<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 |
| 21                          | 08:31<br>16:18<br>17:26                     | 07:29<br>17:26                | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 |
| 22                          | 08:30<br>16:20<br>17:29                     | 07:26<br>17:29                | 06:13<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:08 |
| 23                          | 08:28<br>16:22<br>17:31                     | 07:24<br>17:31                | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:08 |
| 24                          | 08:27<br>16:24<br>17:33                     | 07:21<br>17:33                | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 |
| 25                          | 08:25<br>16:26<br>17:35                     | 07:19<br>17:35                | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 |
| 26                          | 08:23<br>16:29<br>17:37                     | 07:16<br>17:37                | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 |
| 27                          | 08:22<br>16:31<br>17:40                     | 07:14<br>17:40                | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 |
| 28                          | 08:20<br>16:33<br>17:42                     | 07:11<br>17:42                | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43 | 04:25<br>22:07 |
| 29                          | 08:18<br>16:35<br>17:44                     |                               | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 |
| 30                          | 08:16<br>16:37<br>17:46                     |                               | 06:52<br>19:45 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 |
| 31                          | 08:14<br>16:39<br>17:48                     |                               | 06:49<br>19:48 |                | 04:34<br>21:48 |                |
| Potential sun hours         | 235                                         | 265                           | 365            | 425            | 507            | 529            |
| Sum of minutes with flicker | 359                                         | 266                           | 0              | 0              | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |



## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 6 - 18

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | July           | August         | September      | October        | November       | December       |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                           | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:23<br>15:41 |
| 3                           | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:24<br>15:41 |
| 4                           | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                           | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                           | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:34<br>15:36 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                          | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                          | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                          | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                          | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                          | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:18 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                          | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                          | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                          | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 08:48<br>15:38 |
| 26                          | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:55-08:15/20 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                          | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:54-08:16/22 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                          | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:54-08:17/23 | 08:16<br>15:46 | 08:48<br>15:40 |
| 29                          | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:54-08:16/22 | 08:17<br>15:45 | 08:48<br>15:41 |
| 30                          | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:53-08:16/23 | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                          | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:54-08:16/22 |                | 08:48<br>15:43 |
| Potential sun hours         | 530            | 470            | 385            | 324            | 248            | 216            |
| Sum of minutes with flicker | 0              | 0              | 0              | 188            | 114            | 1260           |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 7 - 14

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January                                      | February                      | March          | April          | May            | June           |
|-----------------------------|----------------------------------------------|-------------------------------|----------------|----------------|----------------|----------------|
| 1                           | 08:48 09:30-09:44/14<br>15:45 14:17-14:44/27 | 08:13 09:22-09:58/36<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 |
| 2                           | 08:48 09:30-09:46/16<br>15:46 14:18-14:45/27 | 08:11 09:23-09:57/34<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 |
| 3                           | 08:48 09:29-09:46/17<br>15:47 14:18-14:45/27 | 08:09 09:25-09:55/30<br>16:46 | 07:04<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 |
| 4                           | 08:47 09:29-09:48/19<br>15:49 14:20-14:46/26 | 08:07 09:26-09:51/25<br>16:48 | 07:01<br>17:51 | 06:39<br>19:56 | 05:23<br>20:58 | 04:30<br>21:54 |
| 5                           | 08:47 09:28-09:49/21<br>15:50 14:20-14:46/26 | 08:05 09:29-09:39/10<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 |
| 6                           | 08:46 09:27-09:50/23<br>15:52 14:20-14:46/26 | 08:03<br>16:53                | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 |
| 7                           | 08:46 09:26-09:50/24<br>15:53 14:21-14:46/25 | 08:01<br>16:55                | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 |
| 8                           | 08:45 09:25-09:51/26<br>15:55 14:21-14:46/25 | 07:58<br>16:57                | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:58 |
| 9                           | 08:44 09:24-09:52/28<br>16:01 14:22-14:46/24 | 07:56<br>17:00                | 06:48<br>18:01 | 06:26<br>20:06 | 05:12<br>21:09 | 04:26<br>21:59 |
| 10                          | 08:44 09:23-09:53/30<br>15:58 14:22-14:46/24 | 07:54<br>17:02                | 06:45<br>18:04 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:00 |
| 11                          | 08:43 09:22-09:54/32<br>15:59 14:23-14:47/24 | 07:52<br>17:04                | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:25<br>22:01 |
| 12                          | 08:42 09:21-09:55/34<br>16:01 14:24-14:47/23 | 07:50<br>17:06                | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 |
| 13                          | 08:41 09:20-09:56/36<br>16:03 14:25-14:47/22 | 07:47<br>17:09                | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:24<br>22:03 |
| 14                          | 08:40 09:18-09:56/38<br>16:05 14:26-14:46/20 | 07:45<br>17:11                | 06:35<br>18:12 | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 |
| 15                          | 08:39 09:18-09:57/39<br>16:07 14:27-14:46/19 | 07:43<br>17:13                | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 |
| 16                          | 08:38 09:18-09:58/40<br>16:08 14:28-14:45/17 | 07:41<br>17:15                | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 |
| 17                          | 08:36 09:17-09:59/42<br>16:10 14:30-14:45/15 | 07:38<br>17:18                | 06:27<br>18:18 | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 |
| 18                          | 08:35 09:18-09:59/41<br>16:12 14:31-14:43/12 | 07:36<br>17:20                | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:22<br>22:06 |
| 19                          | 08:34 09:17-10:00/43<br>16:14 14:34-14:42/8  | 07:33<br>17:22                | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 |
| 20                          | 08:33 09:17-10:00/43<br>16:16                | 07:31<br>17:24                | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 |
| 21                          | 08:31 09:18-10:01/43<br>16:18                | 07:29<br>17:26                | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 |
| 22                          | 08:30 09:18-10:01/43<br>16:20                | 07:26<br>17:29                | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:08 |
| 23                          | 08:28 09:18-10:01/43<br>16:22                | 07:24<br>17:31                | 06:11<br>18:31 | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 |
| 24                          | 08:27 09:18-10:01/43<br>16:24                | 07:21<br>17:33                | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 |
| 25                          | 08:25 09:18-10:01/43<br>16:27                | 07:19<br>17:35                | 06:05<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 |
| 26                          | 08:23 09:18-10:01/43<br>16:29                | 07:16<br>17:38                | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 |
| 27                          | 08:22 09:18-10:01/43<br>16:31                | 07:14<br>17:40                | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 |
| 28                          | 08:20 09:19-10:00/41<br>16:33                | 07:11<br>17:42                | 05:57<br>18:41 | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 |
| 29                          | 08:18 09:19-10:00/41<br>16:35                |                               | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 |
| 30                          | 08:16 09:20-09:59/39<br>16:37                |                               | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 |
| 31                          | 08:14 09:21-09:59/38<br>16:40                |                               | 06:49<br>19:48 |                | 04:35<br>21:48 |                |
| Potential sun hours         | 235                                          | 265                           | 365            | 425            | 507            | 529            |
| Sum of minutes with flicker | 1483                                         | 135                           | 0              | 0              | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 7 - 14

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | July           | August         | September      | October        | November                      | December                                     |
|-----------------------------|----------------|----------------|----------------|----------------|-------------------------------|----------------------------------------------|
| 1                           | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34                | 08:21 09:03-09:37/34<br>15:42 14:06-14:28/22 |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32                | 08:23 09:05-09:37/32<br>15:41 14:06-14:29/23 |
| 3                           | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29                | 08:24 09:07-09:37/30<br>15:41 14:06-14:30/24 |
| 4                           | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27                | 08:26 09:09-09:37/28<br>15:40 14:06-14:31/25 |
| 5                           | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25                | 08:28 09:11-09:37/26<br>15:39 14:07-14:32/25 |
| 6                           | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30 09:00-09:07/7<br>16:23  | 08:29 09:12-09:36/24<br>15:38 14:06-14:31/25 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32 08:58-09:13/15<br>16:21 | 08:31 09:14-09:36/22<br>15:38 14:07-14:32/25 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35 08:56-09:24/28<br>16:19 | 08:32 09:16-09:36/20<br>15:37 14:07-14:33/26 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37 08:54-09:26/32<br>16:17 | 08:34 09:17-09:36/19<br>15:37 14:07-14:33/26 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39 08:54-09:28/34<br>16:15 | 08:35 09:19-09:36/17<br>15:36 14:08-14:34/26 |
| 11                          | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:35<br>18:25 | 07:41 08:52-09:29/37<br>16:13 | 08:36 09:20-09:35/15<br>15:36 14:08-14:34/26 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43 08:53-09:31/38<br>16:11 | 08:37 09:21-09:35/14<br>15:35 14:08-14:34/26 |
| 13                          | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45 08:52-09:32/40<br>16:09 | 08:39 09:23-09:35/12<br>15:35 14:09-14:36/27 |
| 14                          | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47 08:51-09:32/41<br>16:07 | 08:40 09:24-09:35/11<br>15:35 14:10-14:36/26 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50 08:52-09:34/42<br>16:05 | 08:41 09:25-09:35/10<br>15:35 14:10-14:36/26 |
| 16                          | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52 08:51-09:34/43<br>16:03 | 08:42 09:26-09:34/8<br>15:35 14:10-14:37/27  |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54 08:52-09:35/43<br>16:02 | 08:43 09:27-09:34/7<br>15:35 14:11-14:37/26  |
| 18                          | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56 08:52-09:35/43<br>16:00 | 08:44 09:28-09:34/6<br>15:35 14:11-14:38/27  |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58 08:52-09:35/43<br>15:58 | 08:44 09:28-09:33/5<br>15:35 14:11-14:38/27  |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00 08:53-09:36/43<br>15:57 | 08:45 09:29-09:33/4<br>15:36 14:12-14:38/26  |
| 21                          | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02 08:53-09:36/43<br>15:55 | 08:46 09:30-09:34/4<br>15:36 14:13-14:39/26  |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04 08:53-09:36/43<br>15:54 | 08:46 09:30-09:34/4<br>15:36 14:13-14:39/26  |
| 23                          | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06 08:53-09:36/43<br>15:52 | 08:47 09:31-09:35/4<br>15:37 14:14-14:40/26  |
| 24                          | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08 08:55-09:37/42<br>15:51 | 08:47 09:31-09:35/4<br>15:37 14:14-14:40/26  |
| 25                          | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10 08:55-09:37/42<br>15:49 | 08:48 09:31-09:36/5<br>15:38 14:14-14:41/27  |
| 26                          | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12 08:56-09:37/41<br>15:48 | 08:48 09:31-09:37/6<br>15:39 14:14-14:41/27  |
| 27                          | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14 08:57-09:37/40<br>15:47 | 08:48 09:31-09:38/7<br>15:40 14:15-14:41/26  |
| 28                          | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16 08:57-09:37/40<br>15:46 | 08:48 09:31-09:39/8<br>15:41 14:15-14:42/27  |
| 29                          | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17 08:59-09:37/38<br>15:45 | 08:48 09:31-09:41/10<br>15:41 14:16-14:42/26 |
| 30                          | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19 09:01-09:37/36<br>15:43 | 08:48 09:31-09:42/11<br>15:42 14:17-14:43/26 |
| 31                          | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                               | 08:48 09:31-09:43/12<br>15:43 14:17-14:44/27 |
| Potential sun hours         | 530            | 470            | 385            | 324            | 248                           | 216                                          |
| Sum of minutes with flicker | 0              | 0              | 0              | 0              | 1060                          | 1220                                         |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 8 - 17

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January                                                     | February                                     | March                         | April          | May            | June           |
|-----------------------------|-------------------------------------------------------------|----------------------------------------------|-------------------------------|----------------|----------------|----------------|
| 1                           | 08:48 12:02-12:31/29<br>15:45 13:33-14:16/43                | 08:13 15:07-15:51/44<br>16:42 13:50-14:21/31 | 07:09 07:39-08:18/39<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 |
| 2                           | 08:48 12:03-12:31/28<br>15:46 13:33-14:17/44                | 08:11 15:08-15:51/43<br>16:44 13:52-14:19/27 | 07:06 07:38-08:15/37<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 |
| 3                           | 08:48 12:03-12:31/28<br>15:47 13:33-14:17/44                | 08:09 15:09-15:51/42<br>16:46 13:54-14:18/24 | 07:04 07:37-08:13/36<br>17:48 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 |
| 4                           | 08:47 12:05-12:32/27<br>15:49 13:34-14:19/45                | 08:07 15:10-15:50/40<br>16:48 13:56-14:15/19 | 07:01 07:37-08:13/36<br>17:51 | 06:39<br>19:56 | 05:23<br>20:58 | 04:30<br>21:54 |
| 5                           | 08:47 12:05-12:31/26<br>15:50 13:34-14:19/45                | 08:05 15:11-15:50/39<br>16:51 14:01-14:11/10 | 06:58 07:36-08:11/35<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 |
| 6                           | 08:46 12:06-12:31/25<br>15:51 13:34-14:19/45                | 08:03 15:13-15:50/37<br>16:53                | 06:56 07:36-08:09/33<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 |
| 7                           | 08:46 12:07-12:30/23<br>15:53 13:34-14:20/46                | 08:01 15:15-15:49/34<br>16:55                | 06:53 07:37-08:07/30<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:27<br>21:57 |
| 8                           | 08:45 12:08-12:30/22<br>15:54 13:35-14:20/45                | 07:58 15:16-15:48/32<br>16:57                | 06:51 07:37-08:05/28<br>17:59 | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:58 |
| 9                           | 08:44 12:10-12:29/19 15:10-15:17/7<br>15:56 13:35-14:21/46  | 07:56 15:20-15:48/28<br>17:00                | 06:48 07:37-08:04/27<br>18:01 | 06:25<br>20:06 | 05:12<br>21:09 | 04:26<br>21:59 |
| 10                          | 08:44 15:09-15:19/10 13:35-14:21/46<br>15:58 12:11-12:29/18 | 07:54 15:26-15:46/20<br>17:02                | 06:45 07:39-08:03/24<br>18:03 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:00 |
| 11                          | 08:43 15:08-15:21/13 13:36-14:22/46<br>15:59 12:13-12:28/15 | 07:52 15:28-15:45/17<br>17:04                | 06:43 07:39-08:02/23<br>18:06 | 06:20<br>20:10 | 05:08<br>21:13 | 04:25<br>22:01 |
| 12                          | 08:42 15:07-15:23/16 13:36-14:23/47<br>16:01 12:16-12:26/10 | 07:50 15:31-15:43/12<br>17:06                | 06:40 07:40-08:00/20<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 |
| 13                          | 08:41 15:07-15:25/18<br>16:03 13:37-14:23/46                | 07:47<br>17:09                               | 06:38 07:42-07:57/15<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:24<br>22:03 |
| 14                          | 08:40 15:06-15:27/21<br>16:05 13:37-14:23/46                | 07:45<br>17:11                               | 06:35 07:45-07:54/9<br>18:12  | 06:12<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 |
| 15                          | 08:39 15:06-15:29/23<br>16:06 13:37-14:24/47                | 07:43<br>17:13                               | 06:32<br>18:14                | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 |
| 16                          | 08:38 15:05-15:30/25<br>16:08 13:37-14:24/47                | 07:41 08:11-08:13/2<br>17:15                 | 06:30<br>18:16                | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 |
| 17                          | 08:36 15:05-15:34/29<br>16:10 13:38-14:24/46                | 07:38 08:09-08:17/8<br>17:18                 | 06:27<br>18:18                | 06:05<br>20:23 | 04:56<br>21:24 | 04:22<br>22:06 |
| 18                          | 08:35 15:04-15:35/31<br>16:12 13:38-14:24/46                | 07:36 08:06-08:18/12<br>17:20                | 06:24<br>18:20                | 06:02<br>20:25 | 04:55<br>21:26 | 04:22<br>22:06 |
| 19                          | 08:34 15:05-15:38/33<br>16:14 13:39-14:25/46                | 07:33 08:04-08:20/16<br>17:22                | 06:22<br>18:23                | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 |
| 20                          | 08:33 15:04-15:40/36<br>16:16 13:39-14:25/46                | 07:31 08:01-08:20/19<br>17:24                | 06:19<br>18:25                | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 |
| 21                          | 08:31 15:04-15:42/38<br>16:18 13:40-14:25/45                | 07:29 07:58-08:20/22<br>17:26                | 06:16<br>18:27                | 05:55<br>20:31 | 04:49<br>21:32 | 04:22<br>22:07 |
| 22                          | 08:30 15:05-15:44/39<br>16:20 13:41-14:25/44                | 07:26 07:56-08:21/25<br>17:29                | 06:14<br>18:29                | 05:52<br>20:33 | 04:48<br>21:33 | 04:22<br>22:08 |
| 23                          | 08:28 15:04-15:45/41<br>16:22 13:41-14:25/44                | 07:24 07:53-08:21/28<br>17:31                | 06:11<br>18:31                | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 |
| 24                          | 08:27 15:04-15:46/42<br>16:24 13:42-14:25/43                | 07:21 07:51-08:22/31<br>17:33                | 06:08<br>18:33                | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 |
| 25                          | 08:25 15:04-15:47/43<br>16:26 13:42-14:25/43                | 07:19 07:48-08:21/33<br>17:35                | 06:05<br>18:35                | 05:45<br>20:40 | 04:43<br>21:39 | 04:23<br>22:08 |
| 26                          | 08:23 15:04-15:48/44<br>16:29 13:43-14:24/41                | 07:16 07:45-08:20/35<br>17:37                | 06:03<br>18:37                | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 |
| 27                          | 08:22 15:05-15:48/43<br>16:31 13:44-14:24/40                | 07:14 07:43-08:20/37<br>17:40                | 06:00<br>18:39                | 05:40<br>20:44 | 04:40<br>21:42 | 04:24<br>22:08 |
| 28                          | 08:20 15:05-15:49/44<br>16:33 13:45-14:23/38                | 07:11 07:40-08:18/38<br>17:42                | 05:57<br>18:41                | 05:37<br>20:46 | 04:38<br>21:44 | 04:25<br>22:08 |
| 29                          | 08:18 15:05-15:49/44<br>16:35 13:46-14:23/37                |                                              | 05:55<br>18:43                | 05:35<br>20:48 | 04:37<br>21:45 | 04:25<br>22:07 |
| 30                          | 08:16 15:06-15:50/44<br>16:37 13:47-14:22/35                |                                              | 06:52<br>19:45                | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 |
| 31                          | 08:14 15:06-15:50/44<br>16:39 13:49-14:22/33                |                                              | 06:49<br>19:48                |                | 04:34<br>21:48 |                |
| Potential sun hours         | 235                                                         | 265                                          | 365                           | 425            | 507            | 529            |
| Sum of minutes with flicker | 2353                                                        | 805                                          | 392                           | 0              | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 8 - 17

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July           | August         | September      | October        | November                | December               |                                  |
|-----------------------------|----------------|----------------|----------------|----------------|-------------------------|------------------------|----------------------------------|
| 1                           | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 08:22-08:37/15<br>16:34 | 07:19<br>15:42         | 14:56-15:15/19<br>11:57-12:09/12 |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 08:19-08:39/20<br>16:32 | 07:21<br>15:41         | 14:52-15:16/24<br>11:55-12:11/16 |
| 3                           | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 08:17-08:40/23<br>16:29 | 07:24<br>15:41         | 14:48-15:18/30<br>11:54-12:13/19 |
| 4                           | 04:29<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 08:16-08:40/24<br>16:27 | 07:26<br>15:40         | 14:45-15:19/34<br>11:54-12:14/20 |
| 5                           | 04:30<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41 | 08:14-08:41/27<br>16:25 | 07:28<br>15:39         | 14:44-15:20/36<br>11:54-12:16/22 |
| 6                           | 04:31<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 08:13-08:41/28<br>16:23 | 07:30<br>15:38         | 14:42-15:20/38<br>11:53-12:16/23 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 08:12-08:42/30<br>16:21 | 07:32<br>15:38         | 14:40-15:20/40<br>11:53-12:18/25 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:53 | 07:28<br>18:33 | 08:12-08:45/33<br>16:19 | 07:35<br>15:37         | 14:40-15:21/41<br>11:53-12:19/26 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 08:12-08:46/34<br>16:17 | 07:37<br>15:36         | 14:39-15:21/42<br>11:52-12:19/27 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 08:11-08:47/36<br>16:15 | 07:39<br>15:36         | 14:39-15:22/43<br>11:53-12:21/28 |
| 11                          | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:34<br>18:25 | 08:11-08:47/36<br>16:13 | 07:41<br>15:36         | 14:38-15:22/44<br>11:53-12:21/28 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 08:11-08:49/38<br>16:11 | 07:43<br>15:35         | 14:37-15:21/44<br>11:52-12:22/30 |
| 13                          | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 08:11-08:50/39<br>16:09 | 07:45<br>15:35         | 14:38-15:22/44<br>11:53-12:23/30 |
| 14                          | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 08:13-08:52/39<br>16:07 | 07:47<br>15:35         | 14:37-15:21/44<br>11:53-12:24/31 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 08:15-08:52/37<br>16:05 | 07:50<br>15:35         | 14:38-15:22/44<br>11:53-12:24/31 |
| 16                          | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 08:17-08:52/35<br>16:03 | 07:52<br>15:35         | 14:38-15:21/43<br>11:52-12:25/33 |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 08:19-08:52/33<br>16:02 | 07:54<br>15:35         | 14:37-15:20/43<br>11:52-12:25/33 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 08:22-08:53/31<br>16:00 | 07:56<br>15:35         | 14:38-15:21/43<br>11:53-12:26/33 |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 08:24-08:53/29<br>15:58 | 07:58<br>15:35         | 14:38-15:20/42<br>11:52-12:26/34 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:26-08:52/26<br>15:57 | 08:00<br>15:35         | 14:39-15:19/40<br>11:53-12:27/34 |
| 21                          | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:28-08:51/23<br>15:55 | 08:02<br>15:35         | 14:40-15:19/39<br>11:54-12:28/34 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:31-08:51/20<br>15:54 | 08:04<br>15:36         | 14:40-15:18/38<br>11:53-12:28/35 |
| 23                          | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:33-08:50/17<br>15:52 | 08:06<br>15:37         | 14:41-15:16/35<br>11:55-12:29/34 |
| 24                          | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:52 | 08:35-08:48/13<br>15:51 | 08:08<br>15:37         | 14:41-15:14/33<br>11:55-12:29/34 |
| 25                          | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:38-08:47/9<br>15:49  | 08:10<br>15:38         | 14:43-15:13/30<br>11:55-12:29/34 |
| 26                          | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 07:40-07:44/4<br>15:48  | 08:12<br>15:39         | 14:44-15:09/25<br>11:56-12:29/33 |
| 27                          | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 15:47<br>15:47          | 08:14<br>15:40         | 14:44-15:09/25<br>11:57-12:29/32 |
| 28                          | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 15:46<br>15:46          | 08:16<br>15:40         | 14:45-15:08/23<br>11:57-12:30/33 |
| 29                          | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 15:46<br>15:45          | 08:17<br>15:41         | 14:46-15:07/21<br>11:59-12:30/31 |
| 30                          | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 15:43<br>15:43          | 08:19<br>15:42         | 14:48-15:05/17<br>11:59-12:31/31 |
| 31                          | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 | 12:00-12:05/5<br>15:43  | 12:00-12:05/5<br>15:43 | 13:17-14:04/47<br>12:01-12:31/30 |
| Potential sun hours         | 530            | 470            | 385            | 324            | 248                     | 216                    | 2284                             |
| Sum of minutes with flicker | 0              | 0              | 9              | 723            | 2013                    |                        |                                  |

Table layout: For each day in each month the following matrix apply

|              |                  |                                 |                                |                      |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 9 - 24

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January                                                     | February                                    | March                         | April                         | May                           | June                          |
|-----------------------------|-------------------------------------------------------------|---------------------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1                           | 08:48 14:01-14:39/38<br>15:45 10:04-10:34/30                | 08:13 15:17-15:47/30<br>16:42 17:44         | 07:09<br>17:44                | 06:47 18:34-18:54/20<br>19:50 | 05:30<br>20:52                | 04:33 20:11-20:41/30<br>21:49 |
| 2                           | 08:48 14:02-14:40/38<br>15:46 10:05-10:35/30                | 08:11 15:18-15:47/29<br>16:44 17:46         | 07:06<br>17:46                | 06:44 18:35-18:51/16<br>19:52 | 05:28 20:21-20:24/3<br>20:54  | 04:32 20:11-20:40/29<br>21:51 |
| 3                           | 08:48 14:02-14:40/38<br>15:47 10:06-10:35/29                | 08:09 15:19-15:45/26<br>16:46 17:48         | 07:04<br>17:48                | 06:41 18:39-18:49/10<br>19:54 | 05:26 20:19-20:26/7<br>20:56  | 04:31 20:11-20:40/29<br>21:52 |
| 4                           | 08:47 14:03-14:41/38<br>15:49 10:07-10:36/29                | 08:07 15:20-15:44/24<br>16:48 17:51         | 07:01<br>17:51                | 06:39<br>19:56                | 05:23 20:17-20:28/11<br>20:58 | 04:30 20:12-20:40/28<br>21:54 |
| 5                           | 08:47 14:03-14:41/38<br>15:50 10:07-10:36/29                | 08:05 15:23-15:43/20<br>16:51 17:53         | 06:58<br>17:53                | 06:36<br>19:58                | 05:21 20:16-20:30/14<br>21:00 | 04:29 20:12-20:39/27<br>21:55 |
| 6                           | 08:46 14:04-14:41/37<br>15:51 10:07-10:36/29                | 08:03 15:28-15:30/2<br>16:53 15:31-15:41/10 | 06:56<br>17:55                | 06:33<br>20:00                | 05:19 20:15-20:32/17<br>21:02 | 04:28 20:13-20:40/27<br>21:56 |
| 7                           | 08:46 14:04-14:42/38<br>15:53 10:08-10:36/28                | 08:00 16:55<br>17:57                        | 06:53<br>17:57                | 06:31<br>20:02                | 05:17 20:14-20:34/20<br>21:04 | 04:27 20:13-20:39/26<br>21:57 |
| 8                           | 08:45 14:05-14:42/37<br>15:54 10:08-10:36/28                | 07:58<br>16:57                              | 06:51<br>17:59                | 06:28<br>20:04                | 05:15 20:14-20:36/22<br>21:06 | 04:26 20:15-20:40/25<br>21:58 |
| 9                           | 08:44 14:06-14:42/36<br>15:56 10:09-10:36/27                | 07:56<br>17:00                              | 06:48<br>18:01                | 06:25<br>20:06                | 05:12 20:13-20:37/24<br>21:08 | 04:26 20:15-20:39/24<br>21:59 |
| 10                          | 08:44 14:07-14:42/35<br>15:58 10:10-10:36/26                | 07:54<br>17:02                              | 06:45<br>18:03                | 06:23<br>20:08                | 05:10 20:12-20:39/27<br>21:10 | 04:25 20:16-20:40/24<br>22:00 |
| 11                          | 08:43 15:17-15:21/4 10:11-10:37/26<br>15:59 14:08-14:43/35  | 07:52<br>17:04                              | 06:43<br>18:06                | 06:20<br>20:10                | 05:08 20:11-20:41/30<br>21:12 | 04:25 20:16-20:39/23<br>22:01 |
| 12                          | 08:42 15:16-15:23/7 10:12-10:37/25<br>16:01 14:09-14:43/34  | 07:50<br>17:06                              | 06:40<br>18:08                | 06:18<br>20:12                | 05:06 20:10-20:41/31<br>21:14 | 04:24 20:17-20:39/22<br>22:02 |
| 13                          | 08:41 15:16-15:25/9 10:13-10:37/24<br>16:03 14:10-14:44/34  | 07:47<br>17:09                              | 06:37<br>18:10                | 06:15<br>20:15                | 05:04 20:09-20:41/32<br>21:16 | 04:24 20:16-20:38/22<br>22:03 |
| 14                          | 08:40 15:14-15:27/13 10:13-10:36/23<br>16:05 14:11-14:43/32 | 07:45<br>17:11                              | 06:35<br>18:12                | 06:12<br>20:17                | 05:02 20:09-20:42/33<br>21:18 | 04:23 20:17-20:39/22<br>22:04 |
| 15                          | 08:39 15:14-15:29/15 10:15-10:36/21<br>16:06 14:13-14:43/30 | 07:43<br>17:13                              | 06:32<br>18:14                | 06:10<br>20:19                | 05:00 20:08-20:41/33<br>21:20 | 04:23 20:18-20:39/21<br>22:04 |
| 16                          | 08:38 15:13-15:31/18 10:15-10:35/20<br>16:08 14:14-14:43/29 | 07:40<br>17:15                              | 06:29<br>18:16                | 06:07<br>20:21                | 04:58 20:08-20:41/33<br>21:22 | 04:23 20:18-20:39/21<br>22:05 |
| 17                          | 08:36 15:13-15:34/21 10:17-10:35/18<br>16:10 14:17-14:43/26 | 07:38<br>17:17                              | 06:27 17:44-17:52/8<br>18:18  | 06:05<br>20:23                | 04:56 20:08-20:41/33<br>21:24 | 04:22 20:19-20:39/20<br>22:06 |
| 18                          | 08:35 15:13-15:35/22 10:18-10:33/15<br>16:12 14:19-14:42/23 | 07:36<br>17:20                              | 06:24 17:41-17:55/14<br>18:20 | 06:02<br>20:25                | 04:54 20:08-20:41/33<br>21:26 | 04:22 20:19-20:39/20<br>22:06 |
| 19                          | 08:34 15:13-15:38/25 10:21-10:32/11<br>16:14 14:21-14:42/21 | 07:33<br>17:22                              | 06:21 17:38-17:57/19<br>18:22 | 06:00<br>20:27                | 04:53 20:07-20:41/34<br>21:28 | 04:22 20:20-20:39/19<br>22:07 |
| 20                          | 08:32 15:13-15:40/27 10:24-10:29/5<br>16:16 14:22-14:41/19  | 07:31<br>17:24                              | 06:19 17:36-17:58/22<br>18:25 | 05:57<br>20:29                | 04:51 20:08-20:41/33<br>21:30 | 04:22 20:20-20:39/19<br>22:07 |
| 21                          | 08:31 15:12-15:42/30<br>16:18 14:23-14:40/17                | 07:29<br>17:26                              | 06:16 17:36-18:00/24<br>18:27 | 05:55<br>20:31                | 04:49 20:07-20:41/34<br>21:32 | 04:22 20:20-20:39/19<br>22:07 |
| 22                          | 08:30 15:13-15:45/32<br>16:20 14:26-14:39/13                | 07:26<br>17:29                              | 06:13 17:34-18:00/26<br>18:29 | 05:52<br>20:33                | 04:47 20:08-20:41/33<br>21:33 | 04:22 20:20-20:39/19<br>22:07 |
| 23                          | 08:28 15:13-15:45/32<br>16:22 14:29-14:37/8                 | 07:24<br>17:31                              | 06:11 17:33-18:00/27<br>18:31 | 05:50<br>20:35                | 04:46 20:07-20:41/34<br>21:35 | 04:23 20:21-20:40/19<br>22:08 |
| 24                          | 08:26 15:13-15:46/33<br>16:24                               | 07:21<br>17:33                              | 06:08 17:32-18:00/28<br>18:33 | 05:47<br>20:38                | 04:44 20:08-20:41/33<br>21:37 | 04:23 20:21-20:40/19<br>22:08 |
| 25                          | 08:25 15:13-15:46/33<br>16:26                               | 07:19<br>17:35                              | 06:05 17:32-18:01/29<br>18:35 | 05:45<br>20:40                | 04:43 20:08-20:41/33<br>21:39 | 04:23 20:20-20:40/20<br>22:08 |
| 26                          | 08:23 15:13-15:46/33<br>16:29                               | 07:16<br>17:37                              | 06:03 17:32-18:00/28<br>18:37 | 05:42<br>20:42                | 04:41 20:08-20:41/33<br>21:40 | 04:24 20:21-20:41/20<br>22:08 |
| 27                          | 08:22 15:13-15:47/34<br>16:31                               | 07:14<br>17:40                              | 06:00 17:31-17:59/28<br>18:39 | 05:40<br>20:44                | 04:40 20:08-20:41/33<br>21:42 | 04:24 20:20-20:41/21<br>22:08 |
| 28                          | 08:20 15:14-15:47/33<br>16:33                               | 07:11<br>17:42                              | 05:57 17:32-17:59/27<br>18:41 | 05:37<br>20:46                | 04:38 20:09-20:41/32<br>21:43 | 04:25 20:21-20:42/21<br>22:07 |
| 29                          | 08:18 15:14-15:47/33<br>16:35                               |                                             | 05:55 17:32-17:58/26<br>18:43 | 05:35<br>20:48                | 04:37 20:09-20:41/32<br>21:45 | 04:25 20:20-20:41/21<br>22:07 |
| 30                          | 08:16 15:15-15:47/32<br>16:37                               |                                             | 06:52 18:32-18:57/25<br>19:45 | 05:33<br>20:50                | 04:36 20:10-20:41/31<br>21:47 | 04:26 20:20-20:42/22<br>22:07 |
| 31                          | 08:14 15:16-15:47/31<br>16:39                               |                                             | 06:49 18:33-18:56/23<br>19:48 |                               | 04:34 20:10-20:41/31<br>21:48 |                               |
| Potential sun hours         | 235                                                         | 265                                         | 365                           | 425                           | 507                           | 529                           |
| Sum of minutes with flicker | 1684                                                        | 141                                         | 354                           | 46                            | 829                           | 679                           |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|--------------|------------------|-------------------------------------------------------------------------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |



Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 9 - 24

Assumptions for shadow calculations

Reference year for calendar 2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July                          | August                        | September                     | October        | November                                                    | December                                                   |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|-------------------------------------------------------------|------------------------------------------------------------|
| 1                           | 04:27 20:21-20:43/22<br>22:06 | 05:12 20:20-20:51/31<br>21:26 | 06:14<br>20:12                | 07:14<br>18:52 | 07:19<br>16:34                                              | 08:21 14:58-15:04/6 09:53-10:18/25<br>15:42 13:50-14:25/35 |
| 2                           | 04:28 20:21-20:44/23<br>22:06 | 05:14 20:21-20:51/30<br>21:24 | 06:16<br>20:09                | 07:16<br>18:49 | 07:21<br>16:32                                              | 08:23 15:00-15:03/3 09:53-10:19/26<br>15:41 13:50-14:25/35 |
| 3                           | 04:29 20:20-20:44/24<br>22:05 | 05:16 20:22-20:50/28<br>21:22 | 06:18<br>20:07                | 07:18<br>18:46 | 07:24<br>16:29                                              | 08:24 13:50-14:26/36<br>15:40 09:53-10:20/27               |
| 4                           | 04:29 20:20-20:44/24<br>22:05 | 05:18 20:23-20:48/25<br>21:20 | 06:20<br>20:04                | 07:20<br>18:44 | 07:26<br>16:27                                              | 08:26 13:50-14:27/37<br>15:40 09:53-10:21/28               |
| 5                           | 04:30 20:20-20:45/25<br>22:04 | 05:20 20:23-20:45/22<br>21:17 | 06:22<br>20:01                | 07:22<br>18:41 | 07:28 15:02-15:10/8<br>16:25                                | 08:28 13:50-14:26/36<br>15:39 09:54-10:22/28               |
| 6                           | 04:31 20:19-20:45/26<br>22:04 | 05:22 20:23-20:44/21<br>21:15 | 06:24<br>19:59                | 07:24<br>18:38 | 07:30 14:54-15:12/18<br>16:23                               | 08:29 13:50-14:27/37<br>15:38 09:53-10:22/29               |
| 7                           | 04:33 20:19-20:46/27<br>22:03 | 05:24 20:24-20:42/18<br>21:13 | 06:26<br>19:56                | 07:26<br>18:36 | 07:32 14:51-15:14/23<br>16:21                               | 08:31 13:50-14:28/38<br>15:37 09:54-10:23/29               |
| 8                           | 04:34 20:19-20:46/27<br>22:02 | 05:26 20:25-20:40/15<br>21:11 | 06:28<br>19:53                | 07:28<br>18:33 | 07:34 14:50-15:16/26<br>16:19                               | 08:32 13:50-14:28/38<br>15:37 09:55-10:23/28               |
| 9                           | 04:35 20:19-20:47/28<br>22:01 | 05:28 20:26-20:38/12<br>21:09 | 06:30 18:37-18:38/1<br>19:51  | 07:30<br>18:30 | 07:37 14:49-15:16/27<br>16:17                               | 08:33 13:51-14:29/38<br>15:36 09:54-10:23/29               |
| 10                          | 04:36 20:18-20:47/29<br>22:00 | 05:30 20:28-20:36/8<br>21:06  | 06:32 18:31-18:43/12<br>19:48 | 07:32<br>18:28 | 07:39 14:48-15:18/30<br>16:15                               | 08:35 13:50-14:29/39<br>15:36 09:55-10:25/30               |
| 11                          | 04:37 20:19-20:48/29<br>21:59 | 05:32 20:29-20:33/4<br>21:04  | 06:34 18:28-18:45/17<br>19:45 | 07:34<br>18:25 | 07:41 14:47-15:18/31<br>16:13                               | 08:36 13:51-14:30/39<br>15:36 09:55-10:25/30               |
| 12                          | 04:39 20:19-20:49/30<br>21:58 | 05:34<br>21:02                | 06:36 18:26-18:47/21<br>19:43 | 07:36<br>18:23 | 07:43 14:46-15:18/32<br>16:11                               | 08:37 13:51-14:30/39<br>15:35 09:55-10:25/30               |
| 13                          | 04:40 20:18-20:49/31<br>21:57 | 05:36<br>20:59                | 06:38 18:24-18:48/24<br>19:40 | 07:39<br>18:20 | 07:45 14:47-15:19/32<br>16:09                               | 08:38 13:51-14:30/39<br>15:35 09:56-10:26/30               |
| 14                          | 04:41 20:18-20:49/31<br>21:56 | 05:38<br>20:57                | 06:40 18:23-18:48/25<br>19:37 | 07:41<br>18:17 | 07:47 14:46-15:19/33<br>16:07                               | 08:40 13:53-14:31/38<br>15:35 09:57-10:26/29               |
| 15                          | 04:43 20:18-20:50/32<br>21:54 | 05:40<br>20:55                | 06:42 18:22-18:49/27<br>19:35 | 07:43<br>18:15 | 07:49 14:47-15:20/33<br>16:05                               | 08:41 13:53-14:32/39<br>15:35 09:57-10:27/30               |
| 16                          | 04:44 20:18-20:50/32<br>21:53 | 05:42<br>20:52                | 06:44 18:21-18:49/28<br>19:32 | 07:45<br>18:12 | 07:52 14:46-15:20/34<br>16:03                               | 08:42 13:53-14:32/39<br>15:35 09:57-10:27/30               |
| 17                          | 04:46 20:17-20:50/33<br>21:52 | 05:44<br>20:50                | 06:46 18:21-18:49/28<br>19:29 | 07:47<br>18:10 | 07:54 14:46-15:19/33<br>16:02                               | 08:43 13:54-14:32/38<br>15:35 09:58-10:28/30               |
| 18                          | 04:48 20:18-20:51/33<br>21:50 | 05:46<br>20:47                | 06:48 18:20-18:48/28<br>19:27 | 07:49<br>18:07 | 07:56 14:47-15:20/33<br>16:00                               | 08:43 13:54-14:33/39<br>15:35 09:58-10:28/30               |
| 19                          | 04:49 20:17-20:51/34<br>21:49 | 05:48<br>20:45                | 06:50 18:20-18:48/28<br>19:24 | 07:51<br>18:05 | 07:58 14:47-15:20/33<br>15:58                               | 08:44 13:54-14:33/39<br>15:35 09:58-10:28/30               |
| 20                          | 04:51 20:18-20:51/33<br>21:47 | 05:50<br>20:43                | 06:52 18:20-18:48/28<br>19:21 | 07:53<br>18:02 | 08:00 14:47-15:19/32<br>15:57 14:02-14:12/10                | 08:45 13:55-14:34/39<br>15:36 09:59-10:29/30               |
| 21                          | 04:52 20:17-20:51/34<br>21:46 | 05:52<br>20:40                | 06:54 18:19-18:46/27<br>19:18 | 07:55<br>18:00 | 08:02 14:48-15:20/32<br>15:55 14:00-14:15/15                | 08:46 13:56-14:34/38<br>15:36 10:00-10:30/30               |
| 22                          | 04:54 20:18-20:51/33<br>21:44 | 05:54<br>20:38                | 06:56 18:19-18:45/26<br>19:16 | 07:58<br>17:57 | 08:04 14:49-15:18/29<br>15:54 13:59-14:17/18                | 08:46 13:56-14:34/38<br>15:36 10:00-10:30/30               |
| 23                          | 04:56 20:17-20:51/34<br>21:42 | 05:56<br>20:35                | 06:58 18:19-18:44/25<br>19:13 | 08:00<br>17:55 | 08:06 14:49-15:16/27 09:59-10:07/8<br>15:52 13:58-14:18/20  | 08:47 13:56-14:34/38<br>15:37 10:01-10:31/30               |
| 24                          | 04:58 20:18-20:51/33<br>21:41 | 05:58<br>20:33                | 07:00 18:20-18:42/22<br>19:10 | 08:02<br>17:52 | 08:08 14:50-15:14/24 09:58-10:10/12<br>15:51 13:57-14:19/22 | 08:47 13:57-14:36/39<br>15:37 10:01-10:31/30               |
| 25                          | 04:59 20:18-20:52/34<br>21:39 | 06:00<br>20:30                | 07:02 18:21-18:39/18<br>19:08 | 08:04<br>17:50 | 08:10 14:51-15:13/22 09:56-10:12/16<br>15:49 13:57-14:21/24 | 08:48 13:57-14:36/39<br>15:38 10:01-10:31/30               |
| 26                          | 05:01 20:18-20:51/33<br>21:37 | 06:02<br>20:27                | 07:04 18:23-18:36/13<br>19:05 | 08:06<br>16:48 | 08:12 14:52-15:11/19 09:55-10:13/18<br>15:48 13:54-14:21/27 | 08:48 13:57-14:36/39<br>15:39 10:01-10:31/30               |
| 27                          | 05:03 20:18-20:52/34<br>21:35 | 06:04<br>20:25                | 07:06 18:26-18:34/8<br>19:02  | 08:08<br>16:45 | 08:14 14:53-15:10/17 09:54-10:15/21<br>15:47 13:53-14:22/29 | 08:48 13:58-14:36/38<br>15:40 10:02-10:32/30               |
| 28                          | 05:05 20:19-20:52/33<br>21:34 | 06:06<br>20:22                | 07:08<br>19:00                | 08:11<br>16:43 | 08:16 14:54-15:08/14 09:54-10:16/22<br>15:46 13:52-14:23/31 | 08:48 13:58-14:37/39<br>15:40 10:02-10:32/30               |
| 29                          | 05:07 20:19-20:52/33<br>21:32 | 06:08<br>20:20                | 07:10<br>18:57                | 08:13<br>16:41 | 08:17 14:55-15:07/12 09:53-10:17/24<br>15:44 13:51-14:23/32 | 08:48 13:59-14:38/39<br>15:41 10:03-10:33/30               |
| 30                          | 05:08 20:19-20:52/33<br>21:30 | 06:10<br>20:17                | 07:12<br>18:54                | 08:15<br>16:38 | 08:19 14:56-15:05/9 09:53-10:17/24<br>15:43 13:50-14:24/34  | 08:48 14:00-14:38/38<br>15:42 10:04-10:33/29               |
| 31                          | 05:10 20:20-20:52/32<br>21:28 | 06:12<br>20:15                |                               | 07:17<br>16:36 |                                                             | 08:48 14:00-14:39/39<br>15:43 10:04-10:34/30               |
| Potential sun hours         | 530                           | 470                           | 385                           | 324            | 248                                                         | 216                                                        |
| Sum of minutes with flicker | 939                           | 214                           | 406                           | 0              | 1070                                                        | 2097                                                       |

Table layout: For each day in each month the following matrix apply

|              |                  |                                                                                     |
|--------------|------------------|-------------------------------------------------------------------------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst & Real case WTG: 10 - 21-A

Assumptions for shadow calculations

Reference year for calendar 2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January                                                     | February                                                                 | March                               | April                               | May                                         | June        |
|-----------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------------|-------------|
| 1                           | 08:48 10:11-11:08/57<br>15:45 13:59-14:35/36                | 08:13 10:28-11:12/44 14:06-15:10/64<br>16:42 08:46-09:14/28              | 07:09 15:49-16:28/39<br>17:44 19:50 | 06:47 17:44<br>19:50                | 05:30 19:54-20:19/25<br>20:52               | 04:33 21:50 |
| 2                           | 08:48 10:12-11:09/57<br>15:46 14:00-14:38/38                | 08:11 10:30-11:11/41 14:07-15:11/64<br>16:44 08:44-09:14/30              | 07:06 15:51-16:27/36<br>17:46 19:52 | 06:44 19:52<br>20:54 19:53-20:20/27 | 05:28 20:21-20:24/3<br>20:54 19:53-20:20/27 | 04:32 21:51 |
| 3                           | 08:48 10:12-11:09/57<br>15:47 13:59-14:40/41                | 08:09 10:32-11:10/38 14:07-15:10/63<br>16:46 08:42-09:15/33              | 07:04 15:52-16:25/33<br>17:48 19:54 | 06:41 19:54<br>20:56                | 05:26 19:52-20:26/34<br>20:56               | 04:31 21:52 |
| 4                           | 08:47 10:13-11:10/57<br>15:49 14:00-14:43/43                | 08:07 10:34-11:07/33 14:08-15:10/62<br>16:48 08:40-09:14/34              | 07:01 15:54-16:22/28<br>17:51 19:56 | 06:39 19:56<br>20:58                | 05:23 19:51-20:28/37<br>20:58               | 04:30 21:54 |
| 5                           | 08:47 10:13-11:10/57<br>15:50 14:00-14:44/44                | 08:05 10:39-11:04/25 14:09-15:11/62<br>16:51 08:39-09:14/35              | 06:58 15:57-16:19/22<br>17:53 19:58 | 06:36 19:58<br>21:00                | 05:21 19:50-20:30/40<br>21:00               | 04:29 21:55 |
| 6                           | 08:46 10:13-11:11/58<br>15:51 14:00-14:46/46                | 08:03 16:04-16:10/6 14:11-15:11/60<br>16:53 08:40-09:14/34 10:53-10:59/6 | 06:56 16:01-16:11/10<br>17:55 20:00 | 06:33 20:00<br>21:02                | 05:19 19:50-20:32/42<br>21:02               | 04:28 21:56 |
| 7                           | 08:46 10:13-11:11/58<br>15:53 14:00-14:47/47                | 08:00 15:59-16:14/15 14:11-15:10/59<br>16:55 08:40-09:13/33              | 06:53 17:57<br>20:02                | 06:31 20:02<br>21:04                | 05:17 19:49-20:34/45<br>21:04               | 04:27 21:57 |
| 8                           | 08:45 10:13-11:12/59<br>15:54 14:00-14:49/49                | 07:58 15:57-16:20/23 14:13-15:10/57<br>16:57 08:38-09:12/34              | 06:51 20:28<br>21:06                | 06:28 21:06<br>21:08                | 05:14 19:49-20:36/47<br>21:06               | 04:26 21:58 |
| 9                           | 08:44 10:14-11:12/58<br>15:56 14:00-14:50/50                | 07:56 15:55-16:24/29 14:15-15:10/55<br>16:59 08:38-09:11/33              | 06:48 21:09<br>21:01                | 06:25 21:06<br>21:08                | 05:12 19:49-20:37/48<br>21:08               | 04:26 21:59 |
| 10                          | 08:44 10:14-11:13/59<br>15:58 14:00-14:52/52                | 07:54 15:53-16:25/32 14:17-15:09/52<br>17:02 08:38-09:10/32              | 06:45 21:03<br>21:03                | 06:23 21:08<br>21:10                | 05:10 19:48-20:37/49<br>21:10               | 04:25 22:00 |
| 11                          | 08:43 10:14-11:13/59<br>15:59 14:00-14:53/53                | 07:52 15:52-16:27/35 14:21-15:09/48<br>17:04 08:36-09:10/34              | 06:43 21:06<br>21:06                | 06:20 21:10<br>21:12                | 05:08 19:48-20:37/49<br>21:12               | 04:24 22:01 |
| 12                          | 08:42 10:15-11:14/59<br>16:01 14:00-14:55/55                | 07:50 15:51-16:29/38 14:23-15:08/45<br>17:06 08:36-09:10/34              | 06:40 21:08<br>21:12                | 06:18 21:10<br>21:14                | 05:06 19:48-20:37/49<br>21:14               | 04:24 22:02 |
| 13                          | 08:41 10:15-11:15/60<br>16:03 14:01-14:56/55                | 07:47 15:50-16:30/40 14:24-15:07/43<br>17:08 08:36-09:10/34              | 06:37 21:10<br>21:15                | 06:15 21:15<br>21:16                | 05:04 19:48-20:36/48<br>21:16               | 04:23 22:03 |
| 14                          | 08:40 10:15-11:14/59<br>16:05 14:00-14:57/57                | 07:45 15:49-16:31/42 14:25-15:06/41<br>17:11 08:36-09:11/35              | 06:35 21:12<br>21:17                | 06:12 21:15<br>21:18                | 05:02 19:49-20:37/48<br>21:18               | 04:23 22:04 |
| 15                          | 08:39 10:16-11:15/59<br>16:06 14:01-14:58/57                | 07:43 15:48-16:32/44 14:26-15:05/39<br>17:13 08:35-09:10/35              | 06:32 21:18<br>21:19                | 06:10 21:19<br>21:20                | 05:00 19:49-20:36/47<br>21:20               | 04:23 22:04 |
| 16                          | 08:38 10:16-11:15/59<br>16:08 14:00-14:59/59                | 07:40 15:48-16:33/45 14:28-15:04/36<br>17:15 08:36-09:11/35              | 06:29 21:19<br>21:21                | 06:07 21:21<br>21:22                | 04:58 19:49-20:35/46<br>21:22               | 04:22 22:05 |
| 17                          | 08:36 10:17-11:16/59<br>16:10 14:01-15:01/60                | 07:38 15:47-16:33/46 14:29-15:02/33<br>17:17 08:35-09:10/35              | 06:27 21:22<br>21:23                | 06:05 21:23<br>21:24                | 04:56 19:50-20:34/44<br>21:24               | 04:22 22:06 |
| 18                          | 08:35 10:17-11:16/59<br>16:12 14:00-15:01/61                | 07:36 15:47-16:34/47 08:36-09:10/34<br>17:20 14:32-15:00/28              | 06:24 21:24<br>21:26                | 06:02 21:26<br>21:26                | 04:54 19:50-20:34/44<br>21:26               | 04:22 22:06 |
| 19                          | 08:34 10:18-11:16/58<br>16:14 14:01-15:03/62                | 07:33 15:46-16:33/47 08:36-09:09/33<br>17:22 14:34-14:57/23              | 06:21 21:27<br>21:28                | 06:00 21:27<br>21:28                | 04:53 19:50-20:33/43<br>21:28               | 04:22 22:07 |
| 20                          | 08:32 10:18-11:16/58<br>16:16 14:01-15:03/62                | 07:31 15:47-16:34/47 08:37-09:09/32<br>17:24 14:39-14:54/15              | 06:19 21:29<br>21:30                | 05:57 21:30<br>21:30                | 04:51 19:51-20:32/41<br>21:30               | 04:22 22:07 |
| 21                          | 08:31 10:18-11:16/58<br>16:18 14:01-15:04/63                | 07:29 15:46-16:34/48<br>17:26 08:37-09:08/31                             | 06:16 21:31<br>21:32                | 05:54 21:32<br>21:32                | 04:49 20:22-20:30/8<br>21:32                | 04:22 22:07 |
| 22                          | 08:30 10:19-11:17/58<br>16:20 14:02-15:05/63                | 07:26 15:47-16:34/47<br>17:29 08:38-09:07/29                             | 06:13 21:33<br>21:33                | 05:52 21:33<br>21:33                | 04:47 20:26-20:27/1<br>21:33                | 04:22 22:08 |
| 23                          | 08:28 10:20-11:17/57<br>16:22 14:02-15:06/64                | 07:24 15:46-16:33/47<br>17:31 08:39-09:06/27                             | 06:11 21:34<br>21:35                | 05:49 21:35<br>21:35                | 04:46 19:53-20:18/25<br>21:35               | 04:23 22:08 |
| 24                          | 08:27 10:20-11:16/56 09:02-09:07/5<br>16:24 14:02-15:07/65  | 07:21 15:46-16:33/47<br>17:33 08:41-09:05/24                             | 06:08 21:37<br>21:38                | 05:47 21:37<br>21:38                | 04:44 19:54-20:18/24<br>21:37               | 04:23 22:08 |
| 25                          | 08:25 10:21-11:16/55 09:00-09:08/8<br>16:26 14:02-15:07/65  | 07:19 15:47-16:33/46<br>17:35 08:42-09:02/20                             | 06:05 21:39<br>21:40                | 05:45 21:40<br>21:40                | 04:43 19:55-20:18/23<br>21:39               | 04:23 22:08 |
| 26                          | 08:23 10:21-11:16/55 08:58-09:09/11<br>16:29 14:02-15:08/66 | 07:16 15:47-16:32/45<br>17:37 08:44-08:59/15                             | 06:03 21:42<br>21:43                | 05:42 21:42<br>21:42                | 04:41 19:56-20:16/20<br>21:40               | 04:24 22:08 |
| 27                          | 08:22 10:22-11:15/53 08:56-09:11/15<br>16:31 14:03-15:08/65 | 07:14 15:48-16:31/43<br>17:40 08:49-08:55/6                              | 06:00 21:44<br>21:44                | 05:40 21:44<br>21:44                | 04:40 19:57-20:15/18<br>21:42               | 04:24 22:08 |
| 28                          | 08:20 10:23-11:15/52 08:54-09:11/17<br>16:33 14:03-15:09/66 | 07:11 15:49-16:30/41<br>17:42                                            | 05:57 21:45<br>21:45                | 05:37 21:45<br>21:45                | 04:38 19:59-20:14/15<br>21:43               | 04:25 22:07 |
| 29                          | 08:18 10:24-11:14/50 14:04-15:09/65<br>16:35 08:52-09:12/20 |                                                                          | 05:55 21:46<br>21:46                | 05:35 21:46<br>21:46                | 04:37 20:01-20:13/12<br>21:45               | 04:25 22:07 |
| 30                          | 08:16 10:25-11:14/49 14:04-15:10/66<br>16:37 08:50-09:13/23 |                                                                          | 05:52 21:47<br>21:47                | 05:33 21:47<br>21:47                | 04:36 20:03-20:11/8<br>21:47                | 04:26 22:07 |
| 31                          | 08:14 10:26-11:13/47 14:05-15:10/65<br>16:39 08:48-09:13/25 |                                                                          | 05:49 21:48<br>21:48                | 05:30 21:48<br>21:48                | 04:34 21:48<br>21:48                        |             |
| Potential sun hours         | 235                                                         | 265                                                                      | 365                                 | 425                                 | 507                                         | 529         |
| Sum of minutes with flicker | 3620                                                        | 2855                                                                     | 168                                 | 60                                  | 1066                                        | 0           |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 10 - 21-A

Assumptions for shadow calculations

Reference year for calendar 2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July                          | August                        | September      | October                                                     | November                                                    | December                                     |
|-----------------------------|-------------------------------|-------------------------------|----------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------|
| 1                           | 04:27<br>22:06                | 05:12 19:58-20:47/49<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52                                              | 07:19 15:22-15:56/34 13:48-14:39/51<br>16:34 08:06-08:39/33 | 08:21 09:56-10:55/59<br>15:42 13:42-14:36/54 |
| 2                           | 04:28<br>22:06                | 05:14 19:59-20:47/48<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49                                              | 07:21 15:23-15:53/30 13:45-14:39/54<br>16:31 08:06-08:39/33 | 08:23 09:57-10:56/59<br>15:41 13:43-14:35/52 |
| 3                           | 04:28<br>22:06                | 05:16 19:59-20:48/49<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46                                              | 07:24 15:26-15:51/25 13:44-14:40/56<br>16:29 08:08-08:41/33 | 08:24 09:57-10:56/59<br>15:40 13:43-14:35/52 |
| 4                           | 04:29<br>22:05                | 05:18 19:59-20:48/49<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44                                              | 07:26 15:28-15:46/18 13:42-14:40/58<br>16:27 08:08-08:42/34 | 08:26 09:58-10:57/59<br>15:40 13:44-14:35/51 |
| 5                           | 04:30<br>22:04                | 05:20 19:58-20:45/47<br>21:17 | 06:22<br>20:01 | 07:22<br>18:41                                              | 07:28 15:32-15:43/11 13:41-14:41/60<br>16:25 08:09-08:43/34 | 08:28 09:59-10:57/58<br>15:39 13:45-14:33/48 |
| 6                           | 04:31<br>22:04                | 05:22 19:59-20:44/45<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38                                              | 07:30 08:09-08:44/35 10:19-10:32/13<br>16:23 13:40-14:41/61 | 08:29 09:59-10:57/58<br>15:38 13:45-14:33/48 |
| 7                           | 04:32<br>22:03                | 05:24 19:59-20:42/43<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36                                              | 07:32 10:06-10:36/30 13:38-14:40/62<br>16:21 08:09-08:45/36 | 08:31 10:00-10:57/57<br>15:37 13:46-14:32/46 |
| 8                           | 04:34<br>22:02                | 05:26 20:00-20:40/40<br>21:11 | 06:28<br>19:53 | 07:28 16:36-16:46/10<br>18:33                               | 07:34 10:03-10:39/36 13:38-14:41/63<br>16:19 08:11-08:45/34 | 08:32 10:01-10:58/57<br>15:37 13:47-14:31/44 |
| 9                           | 04:35<br>22:01                | 05:28 20:00-20:38/38<br>21:09 | 06:30<br>19:51 | 07:30 16:32-16:54/22<br>18:30                               | 07:37 10:01-10:40/39 13:37-14:41/64<br>16:17 08:13-08:44/31 | 08:33 10:01-10:58/57<br>15:36 13:48-14:30/42 |
| 10                          | 04:36<br>22:00                | 05:30 20:00-20:35/35<br>21:06 | 06:32<br>19:48 | 07:32 16:29-16:57/28<br>18:28                               | 07:39 10:00-10:43/43 13:37-14:42/65<br>16:15 08:16-08:45/29 | 08:35 10:02-10:59/57<br>15:36 13:48-14:28/40 |
| 11                          | 04:37<br>21:59                | 05:32 20:29-20:33/4<br>21:04  | 06:34<br>19:45 | 07:34 16:27-16:59/32<br>18:25                               | 07:41 09:58-10:44/46 13:36-14:41/65<br>16:13 08:18-08:45/27 | 08:36 10:02-10:58/56<br>15:36 13:50-14:27/37 |
| 12                          | 04:39<br>21:58                | 05:34 20:02-20:27/25<br>21:02 | 06:36<br>19:43 | 07:36 16:25-17:01/36<br>18:23                               | 07:43 09:57-10:44/47 13:36-14:41/65<br>16:11 08:21-08:45/24 | 08:37 10:02-10:58/56<br>15:35 13:50-14:25/35 |
| 13                          | 04:40<br>21:57                | 05:36 20:03-20:26/23<br>20:59 | 06:38<br>19:40 | 07:39 16:23-17:02/39<br>18:20                               | 07:45 09:56-10:46/50 13:36-14:41/65<br>16:09 08:23-08:45/22 | 08:39 10:03-11:00/57<br>15:35 13:50-14:25/35 |
| 14                          | 04:41 20:11-20:19/8<br>21:56  | 05:38 20:05-20:25/20<br>20:57 | 06:40<br>19:37 | 07:41 16:21-17:02/41<br>18:17                               | 07:47 09:55-10:47/52 08:25-08:44/19<br>16:07 13:35-14:41/66 | 08:40 10:04-11:00/56<br>15:35 13:52-14:26/34 |
| 15                          | 04:43 20:10-20:22/12<br>21:54 | 05:40 20:07-20:22/15<br>20:55 | 06:42<br>19:35 | 07:43 16:21-17:04/43<br>18:15                               | 07:49 09:55-10:48/53 08:28-08:44/16<br>16:05 13:36-14:41/65 | 08:41 10:04-11:00/56<br>15:35 13:53-14:26/33 |
| 16                          | 04:44 20:08-20:23/15<br>21:53 | 05:42 20:10-20:19/9<br>20:52  | 06:44<br>19:32 | 07:45 16:20-17:04/44<br>18:12 09:17-09:31/14                | 07:52 09:55-10:49/54 08:30-08:43/13<br>16:03 13:36-14:41/65 | 08:42 10:05-11:00/55<br>15:35 13:53-14:26/33 |
| 17                          | 04:46 20:06-20:24/18<br>21:52 | 05:44 20:10-20:19/9<br>20:50  | 06:46<br>19:29 | 07:47 16:19-17:04/45<br>18:10 09:14-09:33/19                | 07:54 09:54-10:49/55 08:33-08:43/10<br>16:02 13:35-14:40/65 | 08:43 10:05-11:01/56<br>15:35 13:54-14:27/33 |
| 18                          | 04:47 20:06-20:26/20<br>21:50 | 05:46 20:10-20:19/9<br>20:47  | 06:48<br>19:27 | 07:49 16:18-17:04/46<br>18:07 09:12-09:35/23                | 07:56 09:54-10:50/56 08:35-08:42/7<br>16:00 13:36-14:41/65  | 08:43 10:06-11:01/55<br>15:35 13:55-14:27/32 |
| 19                          | 04:49 20:05-20:27/22<br>21:49 | 05:48 20:10-20:19/9<br>20:45  | 06:50<br>19:24 | 07:51 16:18-17:05/47<br>18:05 09:11-09:37/26                | 07:58 09:54-10:51/57 08:37-08:40/3<br>15:58 13:36-14:40/64  | 08:44 10:06-11:01/55<br>15:35 13:55-14:27/32 |
| 20                          | 04:51 20:04-20:28/24<br>21:47 | 05:50 20:10-20:19/9<br>20:43  | 06:52<br>19:21 | 07:53 16:17-17:05/48<br>18:02 09:09-09:38/29                | 08:00 09:54-10:51/57<br>15:57 13:36-14:40/64                | 08:45 10:07-11:02/55<br>15:35 13:55-14:27/32 |
| 21                          | 04:52 20:03-20:28/25<br>21:46 | 05:52 20:10-20:19/9<br>20:40  | 06:54<br>19:18 | 07:55 16:17-17:04/47<br>18:00 09:08-09:38/30                | 08:02 09:54-10:52/58<br>15:55 13:37-14:40/63                | 08:46 10:08-11:02/54<br>15:36 13:56-14:28/32 |
| 22                          | 04:54 20:03-20:30/27<br>21:44 | 05:54 20:10-20:19/9<br>20:38  | 06:56<br>19:16 | 07:58 16:16-17:04/48 09:08-09:40/32<br>17:57 15:10-15:22/12 | 08:04 09:54-10:52/58<br>15:54 13:37-14:40/63                | 08:46 10:08-11:02/54<br>15:36 13:56-14:28/32 |
| 23                          | 04:56 20:32-20:40/8<br>21:42  | 05:56 20:10-20:19/9<br>20:35  | 06:58<br>19:13 | 08:00 16:17-17:04/47 09:07-09:40/33<br>17:55 15:06-15:27/21 | 08:06 09:54-10:53/59<br>15:52 13:37-14:39/62                | 08:47 10:09-11:04/55<br>15:37 13:56-14:28/32 |
| 24                          | 04:58 20:02-20:42/40<br>21:41 | 05:58 20:10-20:19/9<br>20:33  | 07:00<br>19:10 | 08:02 16:17-17:03/46 09:06-09:40/34<br>17:52 15:02-15:29/27 | 08:08 09:54-10:53/59<br>15:51 13:37-14:39/62                | 08:47 10:09-11:04/55<br>15:37 13:57-14:29/32 |
| 25                          | 04:59 20:01-20:44/43<br>21:39 | 06:00 20:10-20:19/9<br>20:30  | 07:02<br>19:08 | 08:04 16:17-17:03/46 09:05-09:40/35<br>17:50 15:00-15:31/31 | 08:10 09:55-10:54/59<br>15:49 13:39-14:39/60                | 08:48 10:09-11:04/55<br>15:38 13:58-14:30/32 |
| 26                          | 05:01 20:00-20:44/44<br>21:37 | 06:02 20:10-20:19/9<br>20:27  | 07:04<br>19:05 | 07:06 15:18-16:03/45 13:58-14:33/35<br>16:48 08:05-08:40/35 | 08:12 09:55-10:54/59<br>15:48 13:39-14:39/60                | 08:48 10:09-11:04/55<br>15:39 13:58-14:30/32 |
| 27                          | 05:03 20:00-20:45/45<br>21:35 | 06:04 20:10-20:19/9<br>20:25  | 07:06<br>19:02 | 07:08 15:18-16:02/44 13:56-14:34/38<br>16:45 08:05-08:40/35 | 08:14 09:55-10:54/59<br>15:47 13:39-14:38/59                | 08:48 10:09-11:05/56<br>15:39 13:58-14:31/33 |
| 28                          | 05:05 19:59-20:45/46<br>21:34 | 06:06 20:10-20:19/9<br>20:22  | 07:08<br>19:00 | 07:11 15:18-16:00/42 13:55-14:35/40<br>16:43 08:06-08:41/35 | 08:16 09:55-10:55/60<br>15:46 13:40-14:37/57                | 08:48 10:10-11:05/55<br>15:40 13:58-14:31/33 |
| 29                          | 05:07 19:59-20:46/47<br>21:32 | 06:08 20:10-20:19/9<br>20:20  | 07:10<br>18:57 | 07:13 15:19-16:00/41 13:54-14:37/43<br>16:41 08:05-08:40/35 | 08:17 09:56-10:55/59<br>15:44 13:41-14:37/56                | 08:48 10:10-11:06/56<br>15:41 13:59-14:32/33 |
| 30                          | 05:09 19:59-20:47/48<br>21:30 | 06:10 20:10-20:19/9<br>20:17  | 07:12<br>18:54 | 07:15 15:20-15:59/39 13:53-14:37/44<br>16:38 08:05-08:39/34 | 08:19 09:56-10:55/59<br>15:43 13:41-14:36/55                | 08:48 10:11-11:07/56<br>15:42 13:59-14:33/34 |
| 31                          | 05:10 19:59-20:48/49<br>21:28 | 06:12 20:10-20:19/9<br>20:15  | 07:14<br>18:56 | 07:17 15:22-15:58/36 13:52-14:38/46<br>16:36 08:06-08:40/34 | 08:21 09:56-10:55/59<br>15:43 13:41-14:36/55                | 08:48 10:11-11:08/57<br>15:43 13:59-14:34/35 |
| Potential sun hours         | 530                           | 470                           | 385            | 324                                                         | 248                                                         | 216                                          |
| Sum of minutes with flicker | 569                           | 566                           | 0              | 1782                                                        | 3708                                                        | 2918                                         |

Table layout: For each day in each month the following matrix apply

|              |                  |                                 |                                |                      |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 11 - 22-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January                             | February                           | March                | April                | May                  | June  |
|-----------------------------|-------------------------------------|------------------------------------|----------------------|----------------------|----------------------|-------|
| 1                           | 08:48 13:50-14:42/52 12:20-13:02/42 | 08:12 14:10-14:48/38               | 07:09                | 06:47 18:49-19:14/25 | 05:30 19:44-20:13/29 | 04:33 |
|                             | 15:45 09:48-10:26/38                | 16:42 08:46-09:09/23               | 17:44                | 19:50                | 20:52 18:44-19:30/46 | 21:49 |
| 2                           | 08:48 13:51-14:43/52 12:22-13:03/41 | 08:11 14:12-14:46/34               | 07:06                | 06:44 18:49-19:13/24 | 05:28 19:44-20:13/29 | 04:32 |
|                             | 15:46 09:48-10:27/39                | 16:44 08:46-09:10/24               | 17:46                | 19:52                | 20:54 18:44-19:30/46 | 21:51 |
| 3                           | 08:48 13:51-14:43/52 12:22-13:02/40 | 08:09 14:16-14:25/9 08:46-09:11/25 | 07:04                | 06:41 18:50-19:13/23 | 05:26 19:44-20:13/29 | 04:31 |
|                             | 15:47 09:48-10:27/39                | 16:46 14:28-14:43/15               | 17:48                | 19:54                | 20:56 18:45-19:29/44 | 21:52 |
| 4                           | 08:47 13:52-14:45/53 12:23-13:03/40 | 08:07 14:33-14:39/6                | 07:01                | 06:39 18:50-19:11/21 | 05:23 19:44-20:13/29 | 04:30 |
|                             | 15:49 09:49-10:28/39                | 16:48 08:45-09:10/25               | 17:50                | 19:56                | 20:58 18:46-19:28/42 | 21:54 |
| 5                           | 08:47 13:52-14:45/53 12:24-13:03/39 | 08:05 08:46-09:11/25               | 06:58                | 06:36 18:50-19:10/20 | 05:21 19:45-20:12/27 | 04:29 |
|                             | 15:50 09:49-10:28/39                | 16:51                              | 17:53                | 19:58                | 21:00 18:47-19:28/41 | 21:55 |
| 6                           | 08:46 13:52-14:45/53 12:24-13:03/39 | 08:03 08:46-09:11/25               | 06:56                | 06:33 18:52-19:08/16 | 05:19 19:45-20:12/27 | 04:28 |
|                             | 15:51 09:50-10:28/38                | 16:53                              | 17:55                | 20:00                | 21:02 18:47-19:27/40 | 21:56 |
| 7                           | 08:46 13:52-14:46/54 12:25-13:03/38 | 08:00 08:47-09:12/25               | 06:53                | 06:31 18:54-19:05/11 | 05:17 19:46-20:11/25 | 04:27 |
|                             | 15:53 09:50-10:28/38                | 16:55                              | 17:57                | 20:02 19:08-19:16/8  | 21:04 18:48-19:26/38 | 21:57 |
| 8                           | 08:45 13:52-14:46/54 12:25-13:03/38 | 07:58 08:46-09:11/25               | 06:51                | 06:28 19:03-19:22/19 | 05:14 19:46-20:11/25 | 04:26 |
|                             | 15:54 09:50-10:29/39                | 16:57                              | 17:59                | 20:04                | 21:06 18:50-19:25/35 | 21:58 |
| 9                           | 08:44 13:52-14:47/55 12:26-13:04/38 | 07:56 08:47-09:11/24               | 06:48                | 06:25 18:59-19:24/25 | 05:12 19:47-20:10/23 | 04:26 |
|                             | 15:56 09:51-10:29/38                | 16:59                              | 18:01                | 20:06                | 21:08 18:51-19:23/32 | 21:59 |
| 10                          | 08:43 13:53-14:48/55 12:27-13:04/37 | 07:54 08:48-09:10/22               | 06:45                | 06:23 18:57-19:27/30 | 05:10 19:48-20:09/21 | 04:25 |
|                             | 15:58 09:51-10:30/39                | 17:02                              | 18:03                | 20:08                | 21:10 18:52-19:22/30 | 22:00 |
| 11                          | 08:43 13:53-14:48/55 12:28-13:04/36 | 07:52 08:48-09:09/21               | 06:43                | 06:20 18:55-19:28/33 | 05:08 19:49-20:07/18 | 04:24 |
|                             | 15:59 09:52-10:30/38                | 17:04                              | 18:06                | 20:10                | 21:12 18:53-19:20/27 | 22:01 |
| 12                          | 08:42 13:54-14:49/55 12:29-13:04/35 | 07:50 08:50-09:08/18               | 06:40                | 06:18 18:52-19:29/37 | 05:06 19:50-20:06/16 | 04:24 |
|                             | 16:01 09:52-10:30/38                | 17:06                              | 18:08                | 20:12                | 21:14 18:55-19:18/23 | 22:02 |
| 13                          | 08:41 13:54-14:50/56 12:30-13:04/34 | 07:47 08:51-09:06/15               | 06:37                | 06:15 18:51-19:30/39 | 05:04 19:52-20:04/12 | 04:23 |
|                             | 16:03 09:53-10:31/38                | 17:08                              | 18:10                | 20:15                | 21:16 18:57-19:16/19 | 22:03 |
| 14                          | 08:40 13:54-14:50/56 12:30-13:03/33 | 07:45 08:53-09:05/12               | 06:35                | 06:12 18:49-19:31/42 | 05:02 19:55-20:02/7  | 04:23 |
|                             | 16:05 09:53-10:30/37                | 17:11                              | 18:12                | 20:17                | 21:18 19:01-19:14/13 | 22:04 |
| 15                          | 08:39 13:55-14:51/56 12:32-13:03/31 | 07:43                              | 06:32                | 06:10 18:49-19:32/43 | 05:00                | 04:23 |
|                             | 16:06 09:54-10:31/37                | 17:13                              | 18:14                | 20:19                | 21:20                | 22:04 |
| 16                          | 08:38 13:55-14:50/55 12:33-13:02/29 | 07:40                              | 06:29                | 06:07 18:47-19:32/45 | 04:58                | 04:22 |
|                             | 16:08 09:54-10:30/36                | 17:15                              | 18:16                | 20:21                | 21:22                | 22:05 |
| 17                          | 08:36 13:55-14:51/56 12:34-13:02/28 | 07:38                              | 06:27                | 06:05 18:47-19:33/46 | 04:56                | 04:22 |
|                             | 16:10 09:55-10:31/36                | 17:17                              | 18:18                | 20:23                | 21:24                | 22:06 |
| 18                          | 08:35 13:55-14:51/56 12:35-13:01/26 | 07:36                              | 06:24                | 06:02 18:45-19:33/48 | 04:54                | 04:22 |
|                             | 16:12 09:56-10:30/34                | 17:20                              | 18:20                | 20:25                | 21:26                | 22:06 |
| 19                          | 08:34 13:57-14:52/55 12:38-13:00/22 | 07:33                              | 06:21                | 06:00 18:45-19:33/48 | 04:53                | 04:22 |
|                             | 16:14 09:57-10:31/34                | 17:22                              | 18:22                | 20:27                | 21:28                | 22:07 |
| 20                          | 08:32 13:57-14:52/55 12:39-12:59/20 | 07:31                              | 06:19                | 05:57 18:45-19:34/49 | 04:51                | 04:22 |
|                             | 16:16 09:58-10:30/32                | 17:24                              | 18:24                | 20:29                | 21:30                | 22:07 |
| 21                          | 08:31 13:57-14:52/55 12:42-12:56/14 | 07:29                              | 06:16                | 05:54 19:58-20:03/5  | 04:49                | 04:22 |
|                             | 16:18 09:58-10:29/31                | 17:26                              | 18:27                | 20:31 18:44-19:33/49 | 21:31                | 22:07 |
| 22                          | 08:30 13:58-14:53/55 12:47-12:53/6  | 07:26                              | 06:13                | 05:52 19:54-20:05/11 | 04:47                | 04:22 |
|                             | 16:20 10:00-10:29/29                | 17:29                              | 18:29                | 20:33 18:44-19:34/50 | 21:33                | 22:07 |
| 23                          | 08:28 13:59-14:52/53                | 07:24                              | 06:11 18:01-18:05/4  | 05:49 19:51-20:07/16 | 04:46                | 04:23 |
|                             | 16:22 10:01-10:28/27                | 17:31                              | 18:31                | 20:35 18:43-19:33/50 | 21:35                | 22:08 |
| 24                          | 08:26 13:59-14:52/53                | 07:21                              | 06:08 17:57-18:07/10 | 05:47 19:50-20:09/19 | 04:44                | 04:23 |
|                             | 16:24 10:03-10:27/24                | 17:33                              | 18:33                | 20:37 18:43-19:33/50 | 21:37                | 22:08 |
| 25                          | 08:25 14:00-14:52/52                | 07:19                              | 06:05 17:55-18:09/14 | 05:45 19:49-20:11/22 | 04:43                | 04:23 |
|                             | 16:26 10:05-10:25/20                | 17:35                              | 18:35                | 20:40 18:43-19:33/50 | 21:38                | 22:08 |
| 26                          | 08:23 14:01-14:52/51 08:58-08:59/1  | 07:16                              | 06:03 17:53-18:11/18 | 05:42 19:47-20:12/25 | 04:41                | 04:24 |
|                             | 16:28 10:08-10:15/7 10:16-10:21/5   | 17:37                              | 18:37                | 20:42 18:42-19:32/50 | 21:40                | 22:08 |
| 27                          | 08:22 14:02-14:51/49                | 07:14                              | 06:00 17:52-18:13/21 | 05:40 19:46-20:12/26 | 04:40                | 04:24 |
|                             | 16:31 08:56-09:02/6                 | 17:40                              | 18:39                | 20:44 18:43-19:32/49 | 21:42                | 22:08 |
| 28                          | 08:20 14:03-14:51/48                | 07:11                              | 05:57 17:51-18:15/24 | 05:37 19:46-20:13/27 | 04:38                | 04:25 |
|                             | 16:33 08:54-09:04/10                | 17:42                              | 18:41                | 20:46 18:43-19:32/49 | 21:43                | 22:07 |
| 29                          | 08:18 14:04-14:50/46                |                                    | 05:55 17:50-18:15/25 | 05:35 19:45-20:13/28 | 04:37                | 04:25 |
|                             | 16:35 08:52-09:06/14                |                                    | 18:43                | 20:48 18:44-19:32/48 | 21:45                | 22:07 |
| 30                          | 08:16 14:06-14:50/44                |                                    | 06:52 18:49-19:15/26 | 05:33 19:44-20:13/29 | 04:36                | 04:26 |
|                             | 16:37 08:50-09:07/17                |                                    | 19:45                | 20:50 18:43-19:31/48 | 21:47                | 22:07 |
| 31                          | 08:14 14:07-14:49/42                |                                    | 06:49 18:50-19:15/25 |                      | 04:34                |       |
|                             | 16:39 08:48-09:08/20                |                                    | 19:47                |                      | 21:48                |       |
| Potential sun hours         | 235                                 | 265                                | 365                  | 425                  | 507                  | 529   |
| Sum of minutes with flicker | 3299                                | 411                                | 167                  | 1353                 | 793                  | 0     |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 11 - 22-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July  | August               | September            | October | November                            | December                            |
|-----------------------------|-------|----------------------|----------------------|---------|-------------------------------------|-------------------------------------|
| 1                           | 04:27 | 05:12 20:00-20:16/16 | 06:14 18:53-19:28/35 | 07:14   | 07:19 08:17-08:39/22                | 08:21 13:35-14:30/55 12:10-12:45/35 |
| 2                           | 04:26 | 21:26 19:06-19:28/22 | 20:12                | 18:51   | 16:34                               | 15:42 09:34-10:12/38                |
| 3                           | 04:28 | 05:14 19:59-20:18/19 | 06:16 18:54-19:26/32 | 07:16   | 07:21 08:16-08:39/23                | 08:23 13:36-14:31/55 12:10-12:46/36 |
| 4                           | 04:29 | 21:24 19:04-19:30/26 | 20:09                | 18:49   | 16:31                               | 15:41 09:34-10:12/38                |
| 5                           | 04:30 | 05:16 19:58-20:19/21 | 06:18 18:56-19:24/28 | 07:18   | 07:24 08:16-08:41/25                | 08:24 13:36-14:31/55 12:10-12:47/37 |
| 6                           | 04:31 | 21:22 19:03-19:32/29 | 20:07                | 18:46   | 16:29                               | 15:40 09:35-10:13/38                |
| 7                           | 04:32 | 05:18 19:57-20:20/23 | 06:20 18:58-19:21/23 | 07:20   | 07:26 08:16-08:40/24                | 08:26 13:37-14:31/54 12:10-12:48/38 |
| 8                           | 04:34 | 21:19 19:01-19:34/33 | 20:04                | 18:43   | 16:27                               | 15:40 09:35-10:14/39                |
| 9                           | 04:35 | 05:20 19:56-20:20/24 | 06:22 18:53-19:00/7  | 07:22   | 07:28 08:16-08:41/25                | 08:28 13:37-14:31/54 12:10-12:48/38 |
| 10                          | 04:36 | 21:17 18:59-19:34/35 | 20:01 19:01-19:16/15 | 18:41   | 16:25                               | 15:39 09:36-10:14/38                |
| 11                          | 04:37 | 05:22 19:55-20:21/26 | 06:24 18:49-19:03/14 | 07:24   | 07:30 08:16-08:41/25                | 08:29 13:37-14:31/54 12:10-12:49/39 |
| 12                          | 04:38 | 21:15 18:58-19:35/37 | 19:59                | 18:38   | 16:23                               | 15:38 09:35-10:14/39                |
| 13                          | 04:40 | 05:24 19:55-20:21/26 | 06:26 18:47-19:04/17 | 07:26   | 07:32 08:15-08:41/26                | 08:31 13:38-14:32/54 12:11-12:50/39 |
| 14                          | 04:41 | 21:13 18:57-19:36/39 | 19:56                | 18:36   | 16:21                               | 15:37 09:36-10:15/39                |
| 15                          | 04:42 | 05:26 19:54-20:22/28 | 06:28 18:45-19:05/20 | 07:28   | 07:34 14:01-14:12/11                | 08:32 13:38-14:32/54 12:10-12:50/40 |
| 16                          | 04:43 | 21:11 18:56-19:37/41 | 19:53                | 18:33   | 16:19 08:16-08:41/25                | 15:37 09:37-10:15/38                |
| 17                          | 04:44 | 05:28 19:54-20:22/28 | 06:30 18:44-19:06/22 | 07:30   | 07:37 13:44-14:15/31                | 08:33 13:39-14:32/53 12:11-12:51/40 |
| 18                          | 04:45 | 21:09 18:55-19:38/43 | 19:51                | 18:30   | 16:17 08:16-08:40/24                | 15:36 09:37-10:15/38                |
| 19                          | 04:46 | 05:30 19:53-20:21/28 | 06:32 18:43-19:06/23 | 07:32   | 07:39 13:42-14:18/36                | 08:35 13:39-14:32/53 12:10-12:51/41 |
| 20                          | 04:47 | 21:06 18:54-19:37/43 | 19:48                | 18:28   | 16:15 08:17-08:41/24                | 15:36 09:38-10:16/38                |
| 21                          | 04:48 | 05:32 19:53-20:22/29 | 06:34 18:42-19:07/25 | 07:34   | 07:41 13:39-14:19/40                | 08:36 13:40-14:33/53 12:11-12:52/41 |
| 22                          | 04:49 | 21:04 18:53-19:38/45 | 19:45                | 18:25   | 16:13 08:18-08:40/22                | 15:36 09:38-10:16/38                |
| 23                          | 04:50 | 05:34 19:53-20:22/29 | 06:36 18:41-19:07/26 | 07:36   | 07:43 13:38-14:20/42                | 08:37 13:41-14:33/52 12:11-12:53/42 |
| 24                          | 04:51 | 21:02 18:52-19:39/47 | 19:43                | 18:22   | 16:11 08:21-08:40/19                | 15:35 09:38-10:16/38                |
| 25                          | 04:52 | 05:36 19:53-20:21/28 | 06:38 18:41-19:06/25 | 07:38   | 07:45 13:37-14:22/45                | 08:38 13:41-14:33/52 12:11-12:53/42 |
| 26                          | 04:53 | 20:59 18:52-19:39/47 | 19:40                | 18:20   | 16:09 08:23-08:39/16                | 15:35 09:40-10:17/37                |
| 27                          | 04:54 | 05:38 19:53-20:21/28 | 06:40 18:41-19:06/25 | 07:41   | 07:47 13:36-14:23/47                | 08:40 13:42-14:34/52 12:12-12:54/42 |
| 28                          | 04:55 | 20:57 18:51-19:39/48 | 19:37                | 18:17   | 16:07 08:25-08:37/12                | 15:35 09:40-10:18/38                |
| 29                          | 04:56 | 05:40 19:53-20:21/28 | 06:42 18:41-19:05/24 | 07:43   | 07:49 13:36-14:24/48                | 08:41 13:43-14:34/51 12:12-12:55/43 |
| 30                          | 04:57 | 21:54                | 20:55 18:51-19:40/49 | 19:35   | 16:05 08:28-08:37/9                 | 15:35 09:40-10:18/38                |
| 31                          | 04:58 | 05:42 19:54-20:20/26 | 06:44 18:41-19:04/23 | 07:45   | 07:52 13:35-14:24/49                | 08:42 13:43-14:34/51 12:13-12:55/42 |
| 32                          | 04:59 | 21:53                | 20:52 18:51-19:40/49 | 19:32   | 16:03 08:30-08:34/4                 | 15:35 09:41-10:18/37                |
| 33                          | 05:00 | 05:44 19:53-20:19/26 | 06:46 18:41-19:02/21 | 07:47   | 07:54 13:34-14:25/51                | 08:43 13:44-14:35/51 12:13-12:56/43 |
| 34                          | 05:01 | 21:52                | 20:50 18:49-19:39/50 | 19:29   | 16:02 09:39-09:56/17                | 15:35 09:41-10:19/38                |
| 35                          | 05:02 | 05:46 19:54-20:18/24 | 06:48 18:42-18:59/17 | 07:49   | 07:56 13:34-14:26/52                | 08:43 13:44-14:34/50 12:14-12:56/42 |
| 36                          | 05:03 | 21:50                | 20:47 18:49-19:39/50 | 19:27   | 16:00 09:38-10:00/22                | 15:35 09:42-10:19/37                |
| 37                          | 05:04 | 05:48 19:55-20:15/20 | 06:50 18:42-18:55/13 | 07:51   | 07:58 13:33-14:26/53                | 08:44 13:44-14:35/51 12:13-12:56/43 |
| 38                          | 05:05 | 21:49                | 20:45 18:49-19:39/50 | 19:24   | 15:58 09:36-10:02/26                | 15:35 09:42-10:19/37                |
| 39                          | 05:06 | 05:50 19:56-20:13/17 | 06:52 18:44-18:53/9  | 07:53   | 08:00 13:33-14:27/54                | 08:45 13:45-14:35/50 12:14-12:57/43 |
| 40                          | 05:07 | 21:47                | 20:43 18:49-19:39/50 | 19:21   | 15:57 09:35-10:03/28                | 15:35 09:43-10:20/37                |
| 41                          | 05:08 | 05:52 19:58-20:11/13 | 06:54 18:47-18:50/3  | 07:55   | 08:02 13:33-14:28/55 12:20-12:31/11 | 08:46 13:46-14:36/50 12:15-12:58/43 |
| 42                          | 05:09 | 21:46                | 20:40 18:49-19:39/50 | 19:18   | 15:55 09:35-10:05/30                | 15:36 09:44-10:21/37                |
| 43                          | 05:10 | 05:54 20:01-20:09/8  | 06:56                | 07:58   | 08:04 13:33-14:28/55 12:17-12:34/17 | 08:46 13:46-14:36/50 12:15-12:58/43 |
| 44                          | 05:11 | 21:44                | 20:38 18:49-19:38/49 | 19:16   | 15:54 09:34-10:06/32                | 15:36 09:44-10:21/37                |
| 45                          | 05:12 | 05:56 18:49-19:38/49 | 06:58                | 08:00   | 08:06 13:33-14:28/55 12:15-12:36/21 | 08:47 13:46-14:36/50 12:15-12:58/43 |
| 46                          | 05:13 | 21:42                | 20:35                | 19:13   | 15:52 09:34-10:06/32                | 15:37 09:45-10:22/37                |
| 47                          | 05:14 | 05:58 18:49-19:37/48 | 07:00                | 08:02   | 08:08 13:33-14:28/55 12:13-12:37/24 | 08:47 13:47-14:37/50 12:16-12:59/43 |
| 48                          | 05:15 | 21:41                | 20:33                | 19:10   | 15:51 09:33-10:07/34                | 15:37 09:45-10:22/37                |
| 49                          | 05:16 | 06:00 18:49-19:37/48 | 07:02                | 08:04   | 08:10 13:34-14:29/55 12:13-12:39/26 | 08:47 13:47-14:38/51 12:16-12:59/43 |
| 50                          | 05:17 | 21:39                | 20:30                | 19:08   | 15:49 09:34-10:09/35                | 15:38 09:45-10:22/37                |
| 51                          | 05:18 | 06:02 18:48-19:35/47 | 07:04                | 07:06   | 08:12 13:34-14:30/56 12:12-12:41/29 | 08:48 13:48-14:38/50 12:17-12:59/42 |
| 52                          | 05:19 | 21:37                | 20:27                | 19:05   | 15:48 09:33-10:09/36                | 15:39 09:45-10:22/37                |
| 53                          | 05:20 | 06:04 18:49-19:34/45 | 07:06                | 07:08   | 08:14 13:34-14:30/56 12:12-12:42/30 | 08:48 13:48-14:39/51 12:17-13:00/43 |
| 54                          | 05:21 | 21:35                | 20:25                | 19:02   | 15:47 09:33-10:10/37                | 15:39 09:46-10:23/37                |
| 55                          | 05:22 | 06:06 18:49-19:33/44 | 07:08                | 07:10   | 08:16 13:34-14:30/56 12:11-12:43/32 | 08:48 13:48-14:39/51 12:18-13:00/42 |
| 56                          | 05:23 | 21:33                | 20:22                | 19:00   | 15:46 09:33-10:10/37                | 15:40 09:46-10:23/37                |
| 57                          | 05:24 | 06:08 18:50-19:32/42 | 07:10                | 07:13   | 08:17 13:34-14:30/56 12:11-12:44/33 | 08:48 13:49-14:40/51 12:18-13:01/43 |
| 58                          | 05:25 | 21:32                | 20:20                | 18:57   | 15:44 09:33-10:11/38                | 15:41 09:46-10:24/38                |
| 59                          | 05:26 | 05:08 20:06-20:11/5  | 06:10 18:51-19:31/40 | 07:12   | 08:19 13:35-14:30/55 12:10-12:45/35 | 08:48 13:49-14:41/52 12:19-13:01/42 |
| 60                          | 05:27 | 21:30 19:12-19:24/12 | 20:17                | 18:54   | 15:43 09:34-10:11/37                | 15:42 09:47-10:25/38                |
| 61                          | 05:28 | 05:10 20:03-20:15/12 | 06:12 18:52-19:30/38 | 18:51   | 07:17 08:19-08:39/20                | 08:48 13:50-14:42/52 12:20-13:02/42 |
| 62                          | 05:29 | 21:28 19:09-19:27/18 | 20:15                | 16:36   | 16:36                               | 15:43 09:48-10:25/37                |
| Potential sun hours         | 530   | 470                  | 385                  | 324     | 248                                 | 216                                 |
| Sum of minutes with flicker | 47    | 1848                 | 447                  | 62      | 2137                                | 4054                                |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-MEŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 12 - 20-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January                       | February                      | March                                        | April                                        | May            | June           |
|-----------------------------|-------------------------------|-------------------------------|----------------------------------------------|----------------------------------------------|----------------|----------------|
| 1                           | 08:48<br>15:45                | 08:12 15:49-16:09/20<br>16:42 | 07:09 17:12-17:17/5<br>17:44                 | 06:47 18:47-19:22/35<br>19:50 17:54-18:39/45 | 05:30<br>20:52 | 04:33<br>21:49 |
| 2                           | 08:48<br>15:46                | 08:11 15:48-16:11/23<br>16:44 | 07:06 17:10-17:20/10<br>17:46                | 06:44 18:46-19:23/37<br>19:52 17:53-18:37/44 | 05:28<br>20:54 | 04:32<br>21:51 |
| 3                           | 08:47<br>15:47                | 08:09 15:46-16:11/25<br>16:46 | 07:04 17:08-17:22/14<br>17:48                | 06:41 18:46-19:25/39<br>19:54 17:55-18:37/42 | 05:26<br>20:56 | 04:31<br>21:52 |
| 4                           | 08:47<br>15:49                | 08:07 15:46-16:12/26<br>16:48 | 07:01 17:06-17:24/18<br>17:51                | 06:39 18:45-19:25/40<br>19:56 17:55-18:36/41 | 05:23<br>20:58 | 04:30<br>21:54 |
| 5                           | 08:47<br>15:50                | 08:05 15:46-16:13/27<br>16:51 | 06:58 17:06-17:27/21<br>17:53                | 06:36 18:44-19:25/41<br>19:58 17:55-18:34/39 | 05:21<br>21:00 | 04:29<br>21:55 |
| 6                           | 08:46<br>15:51                | 08:03 15:46-16:14/28<br>16:53 | 06:56 17:05-17:28/23<br>17:55                | 06:33 18:44-19:26/42<br>20:00 17:57-18:33/36 | 05:19<br>21:02 | 04:28<br>21:56 |
| 7                           | 08:46<br>15:53                | 08:00 15:45-16:14/29<br>16:55 | 06:53 17:04-17:28/24<br>17:57                | 06:31 18:44-19:25/41<br>20:02 17:58-18:31/33 | 05:17<br>21:04 | 04:27<br>21:57 |
| 8                           | 08:45<br>15:54                | 07:58 15:45-16:14/29<br>16:57 | 06:51 17:05-17:28/23<br>17:59                | 06:28 18:45-19:26/41<br>20:04 18:00-18:30/30 | 05:15<br>21:06 | 04:26<br>21:58 |
| 9                           | 08:44<br>15:56                | 07:56 15:45-16:15/30<br>17:00 | 06:48 17:04-17:27/23<br>18:01                | 06:25 18:44-19:25/41<br>20:06 18:01-18:27/26 | 05:12<br>21:08 | 04:26<br>21:59 |
| 10                          | 08:43<br>15:58                | 07:54 15:45-16:14/29<br>17:02 | 06:45 17:04-17:26/22<br>18:03                | 06:23 18:45-19:25/40<br>20:08 18:04-18:25/21 | 05:10<br>21:10 | 04:25<br>22:00 |
| 11                          | 08:43<br>15:59                | 07:52 15:45-16:15/30<br>17:04 | 06:43 17:05-17:26/21<br>18:06                | 06:20 18:45-19:24/39<br>20:10 18:07-18:21/14 | 05:08<br>21:12 | 04:25<br>22:01 |
| 12                          | 08:42<br>16:01                | 07:50 15:46-16:15/29<br>17:06 | 06:40 17:06-17:25/19<br>18:08                | 06:18 18:46-19:23/37<br>20:12                | 05:06<br>21:14 | 04:24<br>22:02 |
| 13                          | 08:41<br>16:03                | 07:47 15:46-16:14/28<br>17:09 | 06:37 17:07-17:29/22<br>18:10                | 06:15 18:47-19:23/36<br>20:15                | 05:04<br>21:16 | 04:24<br>22:03 |
| 14                          | 08:40<br>16:05                | 07:45 15:47-16:14/27<br>17:11 | 06:35 17:08-17:33/25<br>18:12                | 06:12 18:48-19:22/34<br>20:17                | 05:02<br>21:18 | 04:23<br>22:04 |
| 15                          | 08:39<br>16:06                | 07:43 15:47-16:12/25<br>17:13 | 06:32 17:08-17:35/27<br>18:14                | 06:10 18:51-19:21/30<br>20:19                | 05:00<br>21:20 | 04:23<br>22:04 |
| 16                          | 08:37<br>16:08                | 07:40 15:48-16:12/24<br>17:15 | 06:29 17:05-17:36/31<br>18:16                | 06:07 18:54-19:19/25<br>20:21                | 04:58<br>21:22 | 04:23<br>22:05 |
| 17                          | 08:36<br>16:10                | 07:38 15:49-16:10/21<br>17:17 | 06:27 17:03-17:37/34<br>18:18                | 06:05 18:57-19:18/21<br>20:23                | 04:56<br>21:24 | 04:22<br>22:06 |
| 18                          | 08:35<br>16:12                | 07:36 15:51-16:09/18<br>17:20 | 06:24 17:02-17:39/37<br>18:20                | 06:02 18:58-19:15/17<br>20:25                | 04:55<br>21:26 | 04:22<br>22:06 |
| 19                          | 08:34<br>16:14                | 07:33 15:53-16:06/13<br>17:22 | 06:21 17:00-17:40/40<br>18:22                | 06:00 19:01-19:13/12<br>20:27                | 04:53<br>21:28 | 04:22<br>22:07 |
| 20                          | 08:32<br>16:16                | 07:31 15:59-16:01/2<br>17:24  | 06:19 16:59-17:40/41<br>18:25                | 05:57<br>20:29                               | 04:51<br>21:30 | 04:22<br>22:07 |
| 21                          | 08:31<br>16:18                | 07:29<br>17:26                | 06:16 16:58-17:41/43<br>18:27                | 05:55<br>20:31                               | 04:49<br>21:31 | 04:22<br>22:07 |
| 22                          | 08:30<br>16:20                | 07:26<br>17:29                | 06:13 16:57-17:41/44<br>18:29                | 05:52<br>20:33                               | 04:48<br>21:33 | 04:22<br>22:07 |
| 23                          | 08:28<br>16:22                | 07:24<br>17:31                | 06:11 16:56-17:41/45<br>18:31                | 05:50<br>20:35                               | 04:46<br>21:35 | 04:23<br>22:08 |
| 24                          | 08:26<br>16:24                | 07:21<br>17:33                | 06:08 16:55-17:41/46<br>18:33                | 05:47<br>20:37                               | 04:44<br>21:37 | 04:23<br>22:08 |
| 25                          | 08:25<br>16:26                | 07:19<br>17:35                | 06:05 16:55-17:42/47<br>18:35                | 05:45<br>20:40                               | 04:43<br>21:38 | 04:23<br>22:08 |
| 26                          | 08:23<br>16:29                | 07:16<br>17:37                | 06:03 18:01-18:07/6<br>18:37 16:54-17:41/47  | 05:42<br>20:42                               | 04:41<br>21:40 | 04:24<br>22:08 |
| 27                          | 08:22<br>16:31                | 07:14<br>17:40                | 06:00 17:56-18:11/15<br>18:39 16:53-17:41/48 | 05:40<br>20:44                               | 04:40<br>21:42 | 04:24<br>22:08 |
| 28                          | 08:20<br>16:33                | 07:11<br>17:42                | 05:57 17:54-18:14/20<br>18:41 16:54-17:41/47 | 05:37<br>20:46                               | 04:38<br>21:43 | 04:25<br>22:07 |
| 29                          | 08:18 15:54-16:02/8<br>16:35  |                               | 05:55 17:51-18:15/24<br>18:43 16:53-17:41/48 | 05:35<br>20:48                               | 04:37<br>21:45 | 04:25<br>22:07 |
| 30                          | 08:16 15:51-16:04/13<br>16:37 |                               | 06:52 18:49-19:17/28<br>19:45 17:53-18:40/47 | 05:33<br>20:50                               | 04:36<br>21:46 | 04:26<br>22:07 |
| 31                          | 08:14 15:50-16:07/17<br>16:39 |                               | 06:49 18:49-19:21/32<br>19:47 17:54-18:40/46 |                                              | 04:34<br>21:48 |                |
| Potential sun hours         | 235                           | 265                           | 365                                          | 425                                          | 507            | 529            |
| Sum of minutes with flicker | 38                            | 483                           | 1113                                         | 1019                                         | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 12 - 20-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July           | August                        | September                                    | October                       | November                      | December       |
|-----------------------------|----------------|-------------------------------|----------------------------------------------|-------------------------------|-------------------------------|----------------|
| 1                           | 04:27<br>22:06 | 05:12<br>21:26                | 06:14 18:45-19:23/38<br>20:12 18:10-18:17/7  | 07:14 17:47-18:08/21<br>18:52 | 07:19 15:15-15:44/29<br>16:34 | 08:21<br>15:42 |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24                | 06:16 18:44-19:23/39<br>20:09 18:04-18:22/18 | 07:16 17:45-18:04/19<br>18:49 | 07:21 15:14-15:44/30<br>16:32 | 08:23<br>15:41 |
| 3                           | 04:29<br>22:05 | 05:16<br>21:22                | 06:18 18:43-19:23/40<br>20:07 18:01-18:24/23 | 07:18 17:43-18:04/21<br>18:46 | 07:24 15:15-15:44/29<br>16:29 | 08:24<br>15:40 |
| 4                           | 04:29<br>22:05 | 05:18<br>21:19                | 06:20 18:42-19:23/41<br>20:04 17:58-18:26/28 | 07:20 17:42-18:04/22<br>18:44 | 07:26 15:15-15:44/29<br>16:27 | 08:26<br>15:40 |
| 5                           | 04:30<br>22:04 | 05:20<br>21:17                | 06:22 18:40-19:22/42<br>20:01 17:55-18:27/32 | 07:22 17:41-18:04/23<br>18:41 | 07:28 15:15-15:43/28<br>16:25 | 08:28<br>15:39 |
| 6                           | 04:31<br>22:03 | 05:22<br>21:15                | 06:24 18:40-19:21/41<br>19:59 17:53-18:28/35 | 07:24 17:41-18:04/23<br>18:38 | 07:30 15:16-15:43/27<br>16:23 | 08:29<br>15:38 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13                | 06:26 18:40-19:21/41<br>19:56 17:51-18:29/38 | 07:26 17:40-18:04/24<br>18:36 | 07:32 15:16-15:42/26<br>16:21 | 08:31<br>15:38 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11                | 06:28 18:39-19:20/41<br>19:53 17:50-18:30/40 | 07:28 17:40-18:03/23<br>18:33 | 07:34 15:17-15:42/25<br>16:19 | 08:32<br>15:37 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09                | 06:30 18:39-19:19/40<br>19:51 17:49-18:30/41 | 07:30 17:40-18:01/21<br>18:30 | 07:37 15:18-15:41/23<br>16:17 | 08:33<br>15:36 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06                | 06:32 18:39-19:17/38<br>19:48 17:48-18:31/43 | 07:32 17:42-17:59/17<br>18:28 | 07:39 15:19-15:41/22<br>16:15 | 08:35<br>15:36 |
| 11                          | 04:37<br>21:59 | 05:32<br>21:04                | 06:34 18:39-19:16/37<br>19:45 17:47-18:31/44 | 07:34 17:42-17:56/14<br>18:25 | 07:41 15:20-15:39/19<br>16:13 | 08:36<br>15:36 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02                | 06:36 18:40-19:14/34<br>19:43 17:46-18:31/45 | 07:36 17:43-17:53/10<br>18:23 | 07:43 15:21-15:37/16<br>16:11 | 08:37<br>15:35 |
| 13                          | 04:40<br>21:57 | 05:36<br>20:59                | 06:38 18:40-19:11/31<br>19:40 17:45-18:31/46 | 07:39 17:45-17:51/6<br>18:20  | 07:45 15:24-15:35/11<br>16:09 | 08:38<br>15:35 |
| 14                          | 04:41<br>21:55 | 05:38<br>20:57                | 06:40 18:41-19:07/26<br>19:37 17:44-18:31/47 | 07:41<br>18:17                | 07:47 15:28-15:32/4<br>16:07  | 08:40<br>15:35 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55                | 06:42 18:42-19:05/23<br>19:35 17:44-18:31/47 | 07:43<br>18:15                | 07:49<br>16:05                | 08:41<br>15:35 |
| 16                          | 04:44<br>21:53 | 05:42<br>20:52                | 06:44 18:44-19:03/19<br>19:32 17:43-18:31/48 | 07:45<br>18:12                | 07:52<br>16:03                | 08:42<br>15:35 |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50                | 06:46 18:46-19:00/14<br>19:29 17:43-18:30/47 | 07:47<br>18:10                | 07:54<br>16:02                | 08:43<br>15:35 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:47                | 06:48 17:43-18:30/47<br>19:27                | 07:49<br>18:07                | 07:56<br>16:00                | 08:43<br>15:35 |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45                | 06:50 17:42-18:29/47<br>19:24                | 07:51<br>18:05                | 07:58<br>15:58                | 08:44<br>15:35 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43                | 06:52 17:42-18:29/47<br>19:21                | 07:53<br>18:02                | 08:00<br>15:57                | 08:45<br>15:36 |
| 21                          | 04:52<br>21:46 | 05:52<br>20:40                | 06:54 17:42-18:28/46<br>19:18                | 07:55<br>18:00                | 08:02<br>15:55                | 08:46<br>15:36 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38                | 06:56 17:42-18:26/44<br>19:16                | 07:58<br>17:57                | 08:04<br>15:54                | 08:46<br>15:36 |
| 23                          | 04:56<br>21:42 | 05:56<br>20:35                | 06:58 17:42-18:25/43<br>19:13                | 08:00 16:25-16:36/11<br>17:55 | 08:06<br>15:52                | 08:47<br>15:37 |
| 24                          | 04:58<br>21:41 | 05:58 19:07-19:15/8<br>20:33  | 07:00 17:42-18:24/42<br>19:10                | 08:02 16:22-16:38/16<br>17:52 | 08:08<br>15:51                | 08:47<br>15:37 |
| 25                          | 04:59<br>21:39 | 06:00 19:03-19:18/15<br>20:30 | 07:02 17:43-18:22/39<br>19:08                | 08:04 16:19-16:40/21<br>17:50 | 08:10<br>15:49                | 08:47<br>15:38 |
| 26                          | 05:01<br>21:37 | 06:02 19:00-19:19/19<br>20:27 | 07:04 17:44-18:21/37<br>19:05                | 07:06 15:19-15:41/22<br>16:48 | 08:12<br>15:48                | 08:48<br>15:39 |
| 27                          | 05:03<br>21:35 | 06:04 18:58-19:20/22<br>20:25 | 07:06 17:46-18:20/34<br>19:02                | 07:08 15:17-15:42/25<br>16:45 | 08:14<br>15:47                | 08:48<br>15:40 |
| 28                          | 05:05<br>21:33 | 06:06 18:53-19:21/28<br>20:22 | 07:08 17:47-18:18/31<br>19:00                | 07:10 15:16-15:42/26<br>16:43 | 08:16<br>15:46                | 08:48<br>15:40 |
| 29                          | 05:07<br>21:32 | 06:08 18:50-19:22/32<br>20:20 | 07:10 17:49-18:16/27<br>18:57                | 07:13 15:16-15:43/27<br>16:41 | 08:17<br>15:44                | 08:48<br>15:41 |
| 30                          | 05:08<br>21:30 | 06:10 18:48-19:23/35<br>20:17 | 07:12 17:49-18:13/24<br>18:54                | 07:15 15:15-15:44/29<br>16:38 | 08:19<br>15:43                | 08:48<br>15:42 |
| 31                          | 05:10<br>21:28 | 06:12 18:47-19:23/36<br>20:15 |                                              | 07:17 15:14-15:43/29<br>16:36 |                               | 08:48<br>15:43 |
| Potential sun hours         | 530            | 470                           | 385                                          | 324                           | 248                           | 216            |
| Sum of minutes with flicker | 0              | 195                           | 1722                                         | 450                           | 318                           | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case

WTG: 13 - 19-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January        | February       | March          | April                   | May            | June                    |
|-----------------------------|----------------|----------------|----------------|-------------------------|----------------|-------------------------|
| 1                           | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 16:43-17:06/23<br>17:44 | 06:47<br>19:50 | 18:54-19:20/26<br>20:52 |
| 2                           | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 16:44-17:06/22<br>17:46 | 06:44<br>19:52 | 18:52-19:20/28<br>20:58 |
| 3                           | 08:48<br>15:47 | 08:09<br>16:46 | 07:04<br>17:48 | 16:44-17:05/21<br>17:48 | 06:41<br>19:54 | 19:26-19:28/2<br>20:56  |
| 4                           | 08:47<br>15:49 | 08:07<br>16:48 | 07:01<br>17:51 | 16:44-17:03/19<br>17:51 | 06:39<br>19:56 | 19:22-19:29/7<br>20:58  |
| 5                           | 08:47<br>15:50 | 08:05<br>16:51 | 06:58<br>17:53 | 16:46-17:02/16<br>17:53 | 06:36<br>19:58 | 18:50-19:31/41<br>21:00 |
| 6                           | 08:46<br>15:51 | 08:03<br>16:53 | 06:56<br>17:55 | 16:48-17:00/12<br>17:55 | 06:33<br>20:00 | 18:50-19:34/44<br>21:02 |
| 7                           | 08:46<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:53<br>17:57          | 06:31<br>20:02 | 18:49-19:35/46<br>21:04 |
| 8                           | 08:45<br>15:54 | 07:58<br>16:57 | 06:51<br>17:59 | 06:51<br>17:59          | 06:28<br>20:04 | 18:50-19:38/48<br>21:06 |
| 9                           | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:48<br>18:01          | 06:25<br>20:06 | 18:49-19:39/50<br>21:08 |
| 10                          | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:03 | 06:45<br>18:03          | 06:23<br>20:08 | 18:50-19:42/52<br>21:10 |
| 11                          | 08:43<br>15:59 | 07:52<br>17:04 | 06:43<br>18:06 | 06:43<br>18:06          | 06:20<br>20:10 | 18:50-19:43/53<br>21:12 |
| 12                          | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:40<br>18:08          | 06:18<br>20:12 | 18:50-19:43/53<br>21:14 |
| 13                          | 08:41<br>16:03 | 07:47<br>17:09 | 06:37<br>18:10 | 06:37<br>18:10          | 06:15<br>20:15 | 18:51-19:44/53<br>21:16 |
| 14                          | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:35<br>18:12          | 06:12<br>20:17 | 18:52-19:43/51<br>21:18 |
| 15                          | 08:39<br>16:06 | 07:43<br>17:13 | 06:32<br>18:14 | 06:32<br>18:14          | 06:10<br>20:19 | 19:15-19:43/28<br>21:20 |
| 16                          | 08:38<br>16:08 | 07:40<br>17:15 | 06:29<br>18:16 | 06:29<br>18:16          | 06:07<br>20:21 | 19:15-19:42/27<br>21:22 |
| 17                          | 08:36<br>16:10 | 07:38<br>17:17 | 06:27<br>18:18 | 06:27<br>18:18          | 06:05<br>20:23 | 19:17-19:41/24<br>21:24 |
| 18                          | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:24<br>18:20          | 06:02<br>20:25 | 19:18-19:39/21<br>21:26 |
| 19                          | 08:34<br>16:14 | 07:33<br>17:22 | 06:21<br>18:22 | 06:21<br>18:22          | 06:00<br>20:27 | 19:22-19:38/16<br>21:28 |
| 20                          | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 06:19<br>18:25          | 05:57<br>20:29 | 19:24-19:37/13<br>21:30 |
| 21                          | 08:31<br>16:18 | 07:29<br>17:26 | 06:16<br>18:27 | 06:16<br>18:27          | 05:55<br>20:31 | 19:27-19:33/6<br>21:31  |
| 22                          | 08:30<br>16:20 | 07:26<br>17:29 | 06:13<br>18:29 | 06:13<br>18:29          | 05:52<br>20:33 | 04:48<br>21:33          |
| 23                          | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 06:11<br>18:31          | 05:50<br>20:35 | 04:46<br>21:35          |
| 24                          | 08:26<br>16:24 | 07:21<br>17:33 | 06:08<br>18:33 | 06:08<br>18:33          | 05:47<br>20:38 | 04:44<br>21:37          |
| 25                          | 08:25<br>16:26 | 07:19<br>17:35 | 06:05<br>18:35 | 06:05<br>18:35          | 05:45<br>20:40 | 04:43<br>21:38          |
| 26                          | 08:23<br>16:29 | 07:16<br>17:37 | 06:03<br>18:37 | 06:03<br>18:37          | 05:42<br>20:42 | 04:41<br>21:40          |
| 27                          | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 06:00<br>18:39          | 05:40<br>20:44 | 04:40<br>21:42          |
| 28                          | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 18:03-18:14/11<br>18:41 | 05:37<br>20:46 | 04:38<br>21:43          |
| 29                          | 08:18<br>16:35 |                | 05:55<br>18:43 | 17:59-18:16/17<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45          |
| 30                          | 08:16<br>16:37 |                | 06:52<br>19:45 | 18:57-19:18/21<br>19:45 | 05:33<br>20:50 | 04:36<br>21:47          |
| 31                          | 08:14<br>16:39 |                | 06:49<br>19:48 | 18:56-19:20/24<br>19:48 |                | 04:34<br>21:48          |
| Potential sun hours         | 235            | 265            | 365            | 425                     | 507            | 529                     |
| Sum of minutes with flicker | 0              | 163            | 186            | 791                     | 0              | 0                       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case

WTG: 13 - 19-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | July           | August                                       | September                                   | October                       | November       | December       |
|-----------------------------|----------------|----------------------------------------------|---------------------------------------------|-------------------------------|----------------|----------------|
| 1                           | 04:27<br>22:06 | 05:12<br>21:26                               | 06:14 18:49-19:43/54<br>20:12               | 07:14<br>18:52                | 07:19<br>16:34 | 08:21<br>15:42 |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24                               | 06:16 18:48-19:41/53<br>20:09               | 07:16<br>18:49                | 07:21<br>16:32 | 08:23<br>15:41 |
| 3                           | 04:29<br>22:05 | 05:16<br>21:22                               | 06:18 18:48-19:39/51<br>20:07               | 07:18<br>18:46                | 07:24<br>16:29 | 08:24<br>15:41 |
| 4                           | 04:29<br>22:05 | 05:18<br>21:20                               | 06:20 18:47-19:36/49<br>20:04               | 07:20<br>18:44                | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                           | 04:30<br>22:04 | 05:20<br>21:17                               | 06:22 18:45-19:33/48<br>20:01               | 07:22<br>18:41                | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                           | 04:31<br>22:03 | 05:22<br>21:15                               | 06:24 18:45-19:30/45<br>19:59               | 07:24<br>18:38                | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13                               | 06:26 18:45-19:28/43<br>19:56               | 07:26<br>18:36                | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11                               | 06:28 18:45-19:25/40<br>19:53               | 07:28 17:23-17:35/12<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09                               | 06:30 19:17-19:23/6<br>19:51 18:45-19:15/30 | 07:30 17:21-17:36/15<br>18:30 | 07:37<br>16:17 | 08:33<br>15:36 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06                               | 06:32 18:45-19:15/30<br>19:48               | 07:32 17:20-17:38/18<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                          | 04:37<br>21:59 | 05:32<br>21:04                               | 06:34 18:46-19:13/27<br>19:45               | 07:34 17:18-17:39/21<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02                               | 06:36 18:46-19:12/26<br>19:43               | 07:36 17:17-17:39/22<br>18:23 | 07:43<br>16:11 | 08:37<br>15:35 |
| 13                          | 04:40<br>21:57 | 05:36<br>20:59                               | 06:38 18:47-19:11/24<br>19:40               | 07:39 17:16-17:39/23<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                          | 04:42<br>21:56 | 05:38<br>20:57                               | 06:40 18:49-19:09/20<br>19:37               | 07:41 17:15-17:39/24<br>18:17 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55                               | 06:42 18:50-19:06/16<br>19:35               | 07:43 17:16-17:40/24<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                          | 04:44<br>21:53 | 05:42<br>20:52                               | 06:44 18:54-19:02/8<br>19:32                | 07:45 17:15-17:39/24<br>18:12 | 07:52<br>16:03 | 08:42<br>15:35 |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50                               | 06:46<br>19:29                              | 07:47 17:15-17:39/24<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:47                               | 06:48<br>19:27                              | 07:49 17:15-17:37/22<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45                               | 06:50<br>19:24                              | 07:51 17:17-17:35/18<br>18:05 | 07:58<br>15:58 | 08:44<br>15:35 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43                               | 06:52<br>19:21                              | 07:53 17:17-17:32/15<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                          | 04:52<br>21:46 | 05:52<br>20:40                               | 06:54<br>19:18                              | 07:55 17:18-17:30/12<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38                               | 06:56<br>19:16                              | 07:58 17:20-17:27/7<br>17:57  | 08:04<br>15:54 | 08:46<br>15:36 |
| 23                          | 04:56<br>21:42 | 05:56 19:29-19:40/11<br>20:35                | 06:58<br>19:13                              | 08:00 17:24-17:25/1<br>17:55  | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                          | 04:58<br>21:41 | 05:58 19:27-19:42/15<br>20:33                | 07:00<br>19:10                              | 08:02<br>17:52                | 08:08<br>15:51 | 08:47<br>15:37 |
| 25                          | 04:59<br>21:39 | 06:00 19:24-19:43/19<br>20:30                | 07:02<br>19:08                              | 08:04<br>17:50                | 08:10<br>15:49 | 08:47<br>15:38 |
| 26                          | 05:01<br>21:37 | 06:02 19:20-19:43/23<br>20:27                | 07:04<br>19:05                              | 07:06<br>16:48                | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                          | 05:03<br>21:35 | 06:04 19:18-19:43/25<br>20:25 18:58-19:11/13 | 07:06<br>19:02                              | 07:08<br>16:45                | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                          | 05:05<br>21:33 | 06:06 19:17-19:44/27<br>20:22 18:56-19:13/17 | 07:08<br>19:00                              | 07:11<br>16:43                | 08:16<br>15:46 | 08:48<br>15:40 |
| 29                          | 05:07<br>21:32 | 06:08 18:53-19:44/51<br>20:20                | 07:10<br>18:57                              | 07:13<br>16:41                | 08:17<br>15:45 | 08:48<br>15:41 |
| 30                          | 05:09<br>21:30 | 06:10 18:52-19:44/52<br>20:17                | 07:12<br>18:54                              | 07:15<br>16:38                | 08:19<br>15:43 | 08:48<br>15:42 |
| 31                          | 05:10<br>21:28 | 06:12 18:50-19:44/54<br>20:15                |                                             | 07:17<br>16:36                |                | 08:48<br>15:43 |
| Potential sun hours         | 530            | 470                                          | 385                                         | 324                           | 248            | 216            |
| Sum of minutes with flicker | 0              | 307                                          | 570                                         | 282                           | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

### Calculation: Alternative - Worst & Real case

WTG: 14 - 16-A

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Reference year for calendar

2025

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

## Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             |       | January | February | March          | April | May   | June  | July  | August | September | October | November       | December |       |
|-----------------------------|-------|---------|----------|----------------|-------|-------|-------|-------|--------|-----------|---------|----------------|----------|-------|
| 1                           | 08:48 | 08:12   | 07:09    | 17:05-17:17/12 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19          | 08:21    |       |
|                             | 15:45 | 16:42   | 17:44    |                | 19:50 | 20:52 | 21:49 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34          | 15:42    |       |
| 2                           | 08:48 | 08:11   | 07:06    | 17:04-17:20/16 | 06:44 | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21          | 08:23    |       |
|                             | 15:46 | 16:44   | 17:46    |                | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32          | 15:41    |       |
| 3                           | 08:48 | 08:09   | 07:04    | 17:03-17:22/19 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 17:45-17:56/11 | 07:24    | 08:24 |
|                             | 15:47 | 16:46   | 17:48    |                | 19:54 | 20:56 | 21:52 | 22:05 | 21:22  | 20:07     | 18:46   | 16:29          | 15:41    |       |
| 4                           | 08:47 | 08:07   | 07:01    | 17:02-17:24/22 | 06:39 | 05:23 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 17:42-17:57/15 | 07:26    | 08:26 |
|                             | 15:49 | 16:48   | 17:51    |                | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27          | 15:40    |       |
| 5                           | 08:47 | 08:05   | 06:58    | 17:03-17:24/21 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 17:41-17:58/17 | 07:28    | 08:28 |
|                             | 15:50 | 16:51   | 17:53    |                | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:01     | 18:41   | 16:25          | 15:39    |       |
| 6                           | 08:46 | 08:03   | 06:56    | 17:02-17:24/22 | 06:33 | 05:19 | 04:28 | 04:32 | 05:22  | 06:24     | 07:24   | 17:39-17:59/20 | 07:30    | 08:29 |
|                             | 15:52 | 16:53   | 17:55    |                | 20:00 | 21:02 | 21:56 | 22:03 | 21:15  | 19:59     | 18:38   | 16:23          | 15:38    |       |
| 7                           | 08:46 | 08:00   | 06:53    | 17:02-17:23/21 | 06:31 | 05:17 | 04:27 | 04:33 | 05:24  | 06:26     | 07:26   | 17:38-17:59/21 | 07:32    | 08:31 |
|                             | 15:53 | 16:55   | 17:57    |                | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21          | 15:38    |       |
| 8                           | 08:45 | 07:58   | 06:51    | 17:03-17:23/20 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 17:37-17:59/22 | 07:34    | 08:32 |
|                             | 15:55 | 16:57   | 17:59    |                | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:53     | 18:33   | 16:19          | 15:37    |       |
| 9                           | 08:44 | 07:56   | 06:48    | 17:03-17:21/18 | 06:25 | 05:12 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 17:37-17:58/21 | 07:37    | 08:33 |
|                             | 15:56 | 17:00   | 18:01    |                | 20:06 | 21:08 | 21:59 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17          | 15:37    |       |
| 10                          | 08:43 | 07:54   | 06:45    | 17:04-17:19/15 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 17:38-17:59/21 | 07:39    | 08:35 |
|                             | 15:58 | 17:02   | 18:03    |                | 20:08 | 21:10 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15          | 15:36    |       |
| 11                          | 08:43 | 07:52   | 06:43    | 17:07-17:18/11 | 06:20 | 05:08 | 04:25 | 04:37 | 05:32  | 06:34     | 07:34   | 17:37-17:56/19 | 07:41    | 08:36 |
|                             | 15:59 | 17:04   | 18:06    |                | 20:10 | 21:12 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13          | 15:36    |       |
| 12                          | 08:42 | 07:50   | 06:40    |                | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 17:38-17:53/15 | 07:43    | 08:37 |
|                             | 16:01 | 17:06   | 18:08    |                | 20:12 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11          | 15:35    |       |
| 13                          | 08:41 | 07:47   | 06:37    |                | 06:15 | 05:04 | 04:24 | 04:40 | 05:36  | 06:38     | 07:39   | 17:38-17:51/13 | 07:45    | 08:38 |
|                             | 16:03 | 17:09   | 18:10    |                | 20:15 | 21:16 | 22:03 | 21:57 | 20:59  | 19:40     | 18:20   | 16:07          | 15:35    |       |
| 14                          | 08:40 | 07:45   | 06:35    |                | 06:12 | 05:02 | 04:23 | 04:42 | 05:38  | 06:40     | 07:41   | 17:39-17:48/9  | 07:47    | 08:40 |
|                             | 16:05 | 17:11   | 18:12    |                | 20:17 | 21:18 | 22:04 | 21:55 | 20:57  | 19:37     | 18:17   | 16:07          | 15:35    |       |
| 15                          | 08:39 | 07:43   | 06:32    |                | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 17:41-17:46/5  | 07:49    | 08:41 |
|                             | 16:07 | 17:13   | 18:14    |                | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05          | 15:35    |       |
| 16                          | 08:38 | 07:40   | 06:30    |                | 06:07 | 04:58 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52          | 08:42    |       |
|                             | 16:08 | 17:15   | 18:16    |                | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:03          | 15:35    |       |
| 17                          | 08:36 | 07:38   | 06:27    |                | 06:05 | 04:56 | 04:22 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54          | 08:43    |       |
|                             | 16:10 | 17:18   | 18:18    |                | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02          | 15:35    |       |
| 18                          | 08:35 | 07:36   | 06:24    |                | 06:02 | 04:55 | 04:22 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56          | 08:43    |       |
|                             | 16:12 | 17:20   | 18:20    |                | 20:25 | 21:26 | 22:06 | 21:50 | 20:47  | 19:27     | 18:07   | 16:00          | 15:35    |       |
| 19                          | 08:34 | 07:33   | 06:22    |                | 06:00 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58          | 08:44    |       |
|                             | 16:14 | 17:22   | 18:22    |                | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58          | 15:35    |       |
| 20                          | 08:32 | 07:31   | 06:19    |                | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00          | 08:45    |       |
|                             | 16:16 | 17:24   | 18:25    |                | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57          | 15:36    |       |
| 21                          | 08:31 | 07:29   | 06:16    |                | 05:55 | 04:49 | 04:22 | 04:53 | 05:52  | 06:54     | 07:55   | 08:02          | 08:46    |       |
|                             | 16:18 | 17:26   | 18:27    |                | 20:31 | 21:31 | 22:07 | 21:46 | 20:40  | 19:18     | 18:00   | 15:55          | 15:36    |       |
| 22                          | 08:30 | 07:26   | 06:13    |                | 05:52 | 04:48 | 04:23 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04          | 08:46    |       |
|                             | 16:20 | 17:29   | 18:29    |                | 20:33 | 21:33 | 22:07 | 21:44 | 20:38  | 19:16     | 17:57   | 15:54          | 15:36    |       |
| 23                          | 08:28 | 07:24   | 06:11    |                | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06          | 08:47    |       |
|                             | 16:22 | 17:31   | 18:31    |                | 20:35 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52          | 15:37    |       |
| 24                          | 08:26 | 07:21   | 06:08    |                | 05:47 | 04:44 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08          | 08:47    |       |
|                             | 16:24 | 17:33   | 18:33    |                | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:52   | 15:51          | 15:38    |       |
| 25                          | 08:25 | 07:19   | 06:05    |                | 05:45 | 04:43 | 04:23 | 04:59 | 06:00  | 07:02     | 08:04   | 08:10          | 08:47    |       |
|                             | 16:27 | 17:35   | 18:35    |                | 20:40 | 21:38 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:49          | 15:38    |       |
| 26                          | 08:23 | 07:16   | 06:03    |                | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 07:06   | 08:12          | 08:48    |       |
|                             | 16:29 | 17:38   | 18:37    |                | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48          | 15:39    |       |
| 27                          | 08:22 | 07:14   | 06:00    | 17:09-17:13/4  | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 07:08   | 08:14          | 08:48    |       |
|                             | 16:31 | 17:40   | 18:39    |                | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47          | 15:40    |       |
| 28                          | 08:20 | 07:11   | 05:57    | 17:07-17:15/8  | 05:37 | 04:38 | 04:25 | 05:05 | 06:06  | 07:08     | 07:11   | 08:16          | 08:48    |       |
|                             | 16:33 | 17:42   | 18:41    |                | 20:45 | 21:43 | 22:07 | 21:33 | 20:22  | 19:00     | 16:43   | 15:46          | 15:41    |       |
| 29                          | 08:18 |         | 05:55    |                | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 07:13   | 08:17          | 08:48    |       |
|                             | 16:35 |         | 18:43    |                | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45          | 15:41    |       |
| 30                          | 08:16 |         | 06:52    |                | 05:33 | 04:36 | 04:26 | 05:09 | 06:10  | 07:12     | 07:15   | 08:19          | 08:48    |       |
|                             | 16:37 |         | 19:45    |                | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:43          | 15:42    |       |
| 31                          | 08:14 |         | 06:49    |                |       | 04:35 |       | 05:10 | 06:12  |           | 07:17   |                | 08:48    |       |
|                             | 16:40 |         | 19:48    |                |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |                | 15:43    |       |
| Potential sun hours         | 235   | 265     |          | 365            | 425   | 507   | 529   | 529   | 470    | 385       | 324     | 248            | 216      |       |
| Sum of minutes with flicker | 0     | 12      |          | 197            | 0     | 0     | 0     | 0     | 0      | 0         | 209     | 0              | 0        |       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 15 - 13-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January                                                     | February                                                    | March                         | April                | May                  | June                 |
|-----------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------|----------------------|----------------------|
| 1                           | 08:48 13:26-14:05/39<br>15:45                               | 08:13 08:48-09:10/22 15:08-15:40/32<br>16:42 15:50-16:09/19 | 07:09 08:31-09:04/33<br>17:44 | 06:47 05:30<br>19:50 | 05:30 20:52<br>20:52 | 04:33 21:50<br>21:50 |
| 2                           | 08:48 13:27-14:05/38<br>15:46                               | 08:11 08:47-09:11/24 15:08-15:40/32<br>16:44 15:50-16:12/22 | 07:06 08:34-09:01/27<br>17:46 | 06:44 05:28<br>19:52 | 05:28 20:54<br>20:54 | 04:32 21:51<br>21:51 |
| 3                           | 08:48 13:29-14:05/36<br>15:47                               | 08:09 08:46-09:13/27 15:09-15:40/31<br>16:46 15:50-16:15/25 | 07:04 08:44-08:57/13<br>17:48 | 06:41 05:26<br>19:54 | 05:26 20:56<br>20:56 | 04:31 21:52<br>21:52 |
| 4                           | 08:47 13:38-14:06/28<br>15:49 13:32-13:36/4                 | 08:07 08:44-09:13/29 15:09-15:39/30<br>16:48 15:50-16:16/26 | 07:01 08:44-08:57/13<br>17:51 | 06:39 05:23<br>19:56 | 05:23 20:53<br>20:58 | 04:30 21:54<br>21:54 |
| 5                           | 08:47 13:38-14:06/28<br>15:50                               | 08:05 08:43-09:14/31 15:10-15:39/29<br>16:51 15:50-16:19/29 | 06:59 07:53<br>17:53          | 06:36 05:21<br>19:58 | 05:21 20:51<br>21:00 | 04:29 21:55<br>21:55 |
| 6                           | 08:46 13:39-14:06/27<br>15:51                               | 08:03 08:40-09:14/34 15:11-15:38/27<br>16:53 15:50-16:22/32 | 06:56 07:55<br>17:55          | 06:33 05:19<br>20:00 | 05:19 21:02<br>21:02 | 04:28 21:56<br>21:56 |
| 7                           | 08:46 13:39-14:06/27<br>15:53                               | 08:01 08:38-09:15/37 15:13-15:38/25<br>16:55 15:51-16:23/32 | 06:53 07:57<br>17:57          | 06:31 05:17<br>20:02 | 05:17 21:05<br>21:05 | 04:27 21:57<br>21:57 |
| 8                           | 08:45 13:40-14:06/26<br>15:54                               | 07:58 08:34-09:15/41 15:13-15:36/23<br>16:57 15:51-16:23/32 | 06:51 07:59<br>17:59          | 06:28 05:15<br>20:04 | 05:15 21:07<br>21:07 | 04:27 21:58<br>21:58 |
| 9                           | 08:44 13:41-14:06/25<br>15:56                               | 07:56 08:32-09:15/43 15:15-15:35/20<br>17:00 15:52-16:24/32 | 06:48 08:01<br>18:01          | 06:26 05:12<br>20:06 | 05:12 21:09<br>21:09 | 04:26 22:00<br>22:00 |
| 10                          | 08:44 13:42-14:05/23<br>15:58                               | 07:54 08:31-09:16/45 15:18-15:33/15<br>17:02 15:52-16:23/31 | 06:45 08:04<br>18:04          | 06:23 05:10<br>20:08 | 05:10 21:11<br>21:11 | 04:25 22:00<br>22:00 |
| 11                          | 08:43 13:44-14:05/21<br>15:59                               | 07:52 08:29-09:15/46 15:21-15:29/8<br>17:04 15:53-16:23/30  | 06:43 08:06<br>18:06          | 06:20 05:08<br>20:10 | 05:08 21:13<br>21:13 | 04:25 22:01<br>22:01 |
| 12                          | 08:42 13:45-14:05/20<br>16:01 15:14-15:22/8                 | 07:50 08:28-09:15/47<br>17:06 15:55-16:23/28                | 06:40 08:08<br>18:08          | 06:18 05:06<br>20:13 | 05:06 21:15<br>21:15 | 04:24 22:02<br>22:02 |
| 13                          | 08:41 13:47-14:05/18<br>16:03 15:13-15:25/12                | 07:47 08:27-09:14/47<br>17:09 15:57-16:22/25                | 06:38 08:10<br>18:10          | 06:15 05:04<br>20:15 | 05:04 21:17<br>21:17 | 04:24 22:03<br>22:03 |
| 14                          | 08:40 13:48-14:03/15<br>16:05 15:11-15:26/15                | 07:45 08:26-09:14/48<br>17:11 16:00-16:21/21                | 06:35 08:12<br>18:12          | 06:12 05:02<br>20:17 | 05:02 21:18<br>21:18 | 04:23 22:04<br>22:04 |
| 15                          | 08:39 13:50-14:02/12<br>16:06 15:10-15:28/18                | 07:43 08:26-09:14/48<br>17:13 16:04-16:20/16                | 06:32 08:14<br>18:14          | 06:10 05:00<br>20:19 | 05:00 21:20<br>21:20 | 04:23 22:05<br>22:05 |
| 16                          | 08:38 13:54-14:01/7<br>16:08 15:09-15:29/20                 | 07:41 08:25-09:13/48<br>17:15 16:06-16:18/12                | 06:30 08:16<br>18:16          | 06:07 04:58<br>20:21 | 04:58 21:22<br>21:22 | 04:23 22:05<br>22:05 |
| 17                          | 08:36 15:09-15:31/22<br>16:10                               | 07:38 08:25-09:13/48<br>17:18 16:10-16:14/4                 | 06:27 08:18<br>18:18          | 06:05 04:56<br>20:23 | 04:56 21:24<br>21:24 | 04:22 22:06<br>22:06 |
| 18                          | 08:35 15:08-15:32/24<br>16:12                               | 07:36 08:25-09:12/47<br>17:20                               | 06:24 08:20<br>18:20          | 06:02 04:55<br>20:25 | 04:55 21:26<br>21:26 | 04:22 22:06<br>22:06 |
| 19                          | 08:34 15:08-15:33/25<br>16:14                               | 07:33 08:25-09:12/47<br>17:22                               | 06:22 08:23<br>18:23          | 06:00 04:53<br>20:27 | 04:53 21:28<br>21:28 | 04:22 22:07<br>22:07 |
| 20                          | 08:33 15:07-15:34/27<br>16:16                               | 07:31 08:24-09:12/48<br>17:24                               | 06:19 08:25<br>18:25          | 05:57 04:51<br>20:29 | 04:51 21:30<br>21:30 | 04:22 22:07<br>22:07 |
| 21                          | 08:31 15:07-15:35/28<br>16:18                               | 07:29 08:24-09:12/48<br>17:26                               | 06:16 08:27<br>18:27          | 05:55 04:49<br>20:31 | 04:49 21:32<br>21:32 | 04:22 22:07<br>22:07 |
| 22                          | 08:30 15:07-15:36/29<br>16:20                               | 07:26 08:25-09:12/47<br>17:29                               | 06:14 08:29<br>18:29          | 05:52 04:48<br>20:33 | 04:48 21:33<br>21:33 | 04:23 22:08<br>22:08 |
| 23                          | 08:28 15:07-15:37/30<br>16:22                               | 07:24 08:25-09:11/46<br>17:31                               | 06:11 08:31<br>18:31          | 05:50 04:46<br>20:36 | 04:46 21:35<br>21:35 | 04:23 22:08<br>22:08 |
| 24                          | 08:27 15:07-15:37/30<br>16:24                               | 07:21 08:26-09:10/44<br>17:33                               | 06:08 08:33<br>18:33          | 05:47 04:44<br>20:38 | 04:44 21:37<br>21:37 | 04:23 22:08<br>22:08 |
| 25                          | 08:25 15:06-15:38/32<br>16:27                               | 07:19 08:26-09:09/43<br>17:35                               | 06:05 08:35<br>18:35          | 05:45 04:43<br>20:40 | 04:43 21:39<br>21:39 | 04:23 22:08<br>22:08 |
| 26                          | 08:23 15:06-15:38/32<br>16:29                               | 07:16 08:26-09:08/42<br>17:38                               | 06:03 08:37<br>18:37          | 05:42 04:41<br>20:42 | 04:41 21:40<br>21:40 | 04:24 22:08<br>22:08 |
| 27                          | 08:22 15:06-15:39/33<br>16:31 15:55-15:57/2                 | 07:14 08:28-09:07/39<br>17:40                               | 06:00 08:39<br>18:39          | 05:40 04:40<br>20:44 | 04:40 21:42<br>21:42 | 04:24 22:08<br>22:08 |
| 28                          | 08:20 08:55-09:01/6 15:06-15:39/33<br>16:33 15:53-15:59/6   | 07:11 08:29-09:05/36<br>17:42                               | 05:57 08:41<br>18:41          | 05:37 04:38<br>20:46 | 04:38 21:44<br>21:44 | 04:25 22:08<br>22:08 |
| 29                          | 08:18 08:52-09:04/12 15:06-15:39/33<br>16:35 15:52-16:02/10 |                                                             | 05:55 08:43<br>18:43          | 05:35 04:37<br>20:48 | 04:37 21:45<br>21:45 | 04:25 22:07<br>22:07 |
| 30                          | 08:16 08:50-09:07/17 15:07-15:40/33<br>16:37 15:51-16:04/13 |                                                             | 06:52 08:46<br>19:46          | 05:33 04:36<br>20:50 | 04:36 21:47<br>21:47 | 04:26 22:07<br>22:07 |
| 31                          | 08:15 08:49-09:09/20 15:07-15:40/33<br>16:40 15:51-16:07/16 |                                                             | 06:49 08:49<br>19:48          |                      | 04:34 21:48<br>21:48 |                      |
| Potential sun hours         | 235                                                         | 265                                                         | 365                           | 425                  | 507                  | 529                  |
| Sum of minutes with flicker | 1013                                                        | 1840                                                        | 73                            | 0                    | 0                    | 0                    |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 15 - 13-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July           | August         | September      | October        | November       | December                         |                |                                  |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------------------------|----------------|----------------------------------|
| 1                           | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 07:59-08:44/45<br>15:22-15:53/31 | 08:21<br>15:42 | 13:26-13:47/21<br>14:57-15:02/5  |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:01-08:45/44<br>15:21-15:53/32 | 08:23<br>15:41 | 13:26-13:48/22<br>13:26-13:49/23 |
| 3                           | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:03-08:45/42<br>15:21-15:53/32 | 08:24<br>15:41 | 13:26-13:49/23<br>13:26-13:50/24 |
| 4                           | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:05-08:44/39<br>15:20-15:53/33 | 08:26<br>15:40 | 13:26-13:50/24<br>13:26-13:51/25 |
| 5                           | 04:30<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:09-08:45/36<br>15:20-15:53/33 | 08:28<br>15:39 | 13:26-13:51/25<br>13:25-13:51/26 |
| 6                           | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:12-08:44/32<br>15:20-15:50/30 | 08:29<br>15:38 | 13:25-13:51/26<br>13:25-13:53/28 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:14-08:44/30<br>15:20-15:48/28 | 08:31<br>15:38 | 13:25-13:53/28<br>13:26-13:54/28 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19 | 08:15-08:43/28<br>15:20-15:46/26 | 08:32<br>15:37 | 13:26-13:54/28<br>13:19-13:54/35 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:16-08:42/26<br>15:20-15:43/23 | 08:34<br>15:36 | 13:19-13:54/35<br>13:18-13:55/37 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:18-08:42/24<br>15:21-15:42/21 | 08:35<br>15:36 | 13:18-13:55/37<br>13:17-13:55/38 |
| 11                          | 04:37<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:35<br>18:25 | 07:41<br>16:13 | 08:19-08:40/21<br>15:22-15:39/17 | 08:36<br>15:36 | 13:17-13:55/38<br>13:16-13:55/39 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:21-08:40/19<br>15:22-15:37/15 | 08:37<br>15:35 | 13:16-13:55/39<br>13:17-13:57/40 |
| 13                          | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:23-08:38/15<br>15:24-15:35/11 | 08:39<br>15:35 | 13:17-13:57/40<br>13:16-13:57/41 |
| 14                          | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:17 | 07:47<br>16:07 | 08:25-08:35/10<br>15:24-15:33/9  | 08:40<br>15:35 | 13:16-13:57/41<br>13:16-13:58/42 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 15:27-15:31/4<br>14:39-15:12/33  | 08:41<br>15:35 | 13:16-13:58/42<br>13:16-13:58/42 |
| 16                          | 04:44<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:03 | 14:39-15:12/33<br>14:39-15:11/32 | 08:42<br>15:35 | 13:16-13:58/42<br>13:17-13:59/42 |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 14:39-15:11/32<br>14:41-15:12/31 | 08:43<br>15:35 | 13:17-13:59/42<br>13:17-13:59/42 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 14:41-15:12/31<br>14:41-15:11/30 | 08:44<br>15:35 | 13:17-13:59/42<br>13:17-13:59/42 |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58 | 14:41-15:11/30<br>14:41-15:11/30 | 08:44<br>15:35 | 13:17-13:59/42<br>13:17-14:00/43 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 14:41-15:11/30<br>14:43-15:11/28 | 08:45<br>15:36 | 13:17-14:00/43<br>13:18-14:01/43 |
| 21                          | 04:52<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 14:43-15:11/28<br>14:43-15:11/28 | 08:46<br>15:36 | 13:18-14:01/43<br>13:18-14:01/43 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 14:43-15:11/28<br>14:44-15:10/26 | 08:46<br>15:37 | 13:18-14:01/43<br>13:19-14:02/43 |
| 23                          | 04:56<br>21:43 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 14:44-15:10/26<br>14:46-15:10/24 | 08:47<br>15:37 | 13:19-14:02/43<br>13:19-14:02/43 |
| 24                          | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 14:46-15:10/24<br>14:46-15:10/24 | 08:47<br>15:37 | 13:19-14:02/43<br>13:20-14:02/42 |
| 25                          | 04:59<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:49 | 14:46-15:10/24<br>14:48-15:09/21 | 08:48<br>15:38 | 13:20-14:02/42<br>13:21-14:03/42 |
| 26                          | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 14:48-15:09/21<br>13:31-13:40/9  | 08:48<br>15:39 | 13:20-14:02/42<br>13:21-14:03/42 |
| 27                          | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 13:31-13:40/9<br>14:49-15:08/19  | 08:48<br>15:40 | 13:21-14:03/42<br>13:21-14:03/42 |
| 28                          | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 13:29-13:42/13<br>14:50-15:07/17 | 08:48<br>15:40 | 13:21-14:03/42<br>13:22-14:04/42 |
| 29                          | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:18<br>15:45 | 13:27-13:44/17<br>14:52-15:06/14 | 08:48<br>15:41 | 13:22-14:04/42<br>13:23-14:04/41 |
| 30                          | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:43 | 13:27-13:46/19<br>14:54-15:04/10 | 08:48<br>15:42 | 13:23-14:04/41<br>13:25-14:05/40 |
| 31                          | 05:10<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 07:58-08:45/47<br>15:24-15:53/29 | 08:48<br>15:43 | 13:25-14:05/40<br>13:25-14:05/40 |
| Potential sun hours         | 530            | 470            | 385            | 324            | 248            |                                  | 216            |                                  |
| Sum of minutes with flicker | 0              | 0              | 0              | 1015           | 1600           |                                  | 1148           |                                  |

Table layout: For each day in each month the following matrix apply

|              |                  |                                 |                                |                      |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 16 - 11-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum  
373 431 565 449 510 745 768 916 1 192 1 023 777 489 8 238  
Idle start wind speed3,0m/s

|                             | January        | February       | March          | April          | May            | June           | July           | August         | September      | October        | November       | December       |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1                           | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:49 | 04:27<br>22:06 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                           | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:23<br>15:42 |
| 3                           | 08:48<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 | 04:29<br>22:05 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29 | 08:24<br>15:41 |
| 4                           | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:54 | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                           | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                           | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                           | 08:46<br>15:53 | 08:01<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 05:17<br>21:04 | 04:28<br>21:57 | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                           | 08:45<br>15:55 | 07:58<br>16:57 | 06:51<br>17:59 | 06:28<br>20:04 | 05:15<br>21:06 | 04:27<br>21:58 | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                           | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 05:13<br>21:08 | 04:26<br>21:59 | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17 | 08:33<br>15:37 |
| 10                          | 08:44<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 05:10<br>21:10 | 04:25<br>22:00 | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                          | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 05:08<br>21:12 | 04:25<br>22:01 | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:45 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                          | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 05:06<br>21:14 | 04:24<br>22:02 | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                          | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:24<br>22:03 | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09 | 08:39<br>15:35 |
| 14                          | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                          | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:04 | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05 | 08:41<br>15:35 |
| 16                          | 08:38<br>16:08 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                          | 08:36<br>16:10 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                          | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                          | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:35 |
| 20                          | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                          | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:23<br>22:07 | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                          | 08:30<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:07 | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                          | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 04:46<br>21:35 | 04:23<br>22:08 | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                          | 08:27<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                          | 08:25<br>16:27 | 07:19<br>17:35 | 06:06<br>18:35 | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 08:10<br>15:50 | 08:48<br>15:38 |
| 26                          | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                          | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                          | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 04:39<br>21:43 | 04:25<br>22:07 | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                          | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                          | 08:16<br>16:37 |                | 06:52<br>19:46 | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                          | 08:14<br>16:40 |                | 06:49<br>19:48 |                | 04:35<br>21:48 |                | 05:11<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours         | 235            | 265            | 365            | 425            | 507            | 528            | 529            | 470            | 385            | 324            | 248            | 216            |
| Sum of minutes with flicker | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              | 0              |

Table layout: For each day in each month the following matrix apply

|              |                  |                                 |                                |                      |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 17 - 09-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January | February | March | April | May   | June  | July  | August | September | October | November | December |
|-----------------------------|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| 1                           | 08:48   | 08:13    | 07:09 | 06:47 | 05:30 | 04:33 | 04:27 | 05:12  | 06:14     | 07:14   | 07:19    | 08:21    |
|                             | 15:45   | 16:42    | 17:44 | 19:50 | 20:52 | 21:50 | 22:06 | 21:26  | 20:12     | 18:52   | 16:34    | 15:43    |
| 2                           | 08:48   | 08:11    | 07:06 | 06:44 | 05:28 | 04:32 | 04:28 | 05:14  | 06:16     | 07:16   | 07:21    | 08:23    |
|                             | 15:46   | 16:44    | 17:46 | 19:52 | 20:54 | 21:51 | 22:06 | 21:24  | 20:09     | 18:49   | 16:32    | 15:42    |
| 3                           | 08:48   | 08:09    | 07:04 | 06:41 | 05:26 | 04:31 | 04:29 | 05:16  | 06:18     | 07:18   | 07:24    | 08:24    |
|                             | 15:47   | 16:46    | 17:48 | 19:54 | 20:56 | 21:52 | 22:06 | 21:22  | 20:07     | 18:46   | 16:29    | 15:41    |
| 4                           | 08:47   | 08:07    | 07:01 | 06:39 | 05:24 | 04:30 | 04:30 | 05:18  | 06:20     | 07:20   | 07:26    | 08:26    |
|                             | 15:49   | 16:48    | 17:51 | 19:56 | 20:58 | 21:54 | 22:05 | 21:20  | 20:04     | 18:44   | 16:27    | 15:40    |
| 5                           | 08:47   | 08:05    | 06:59 | 06:36 | 05:21 | 04:29 | 04:31 | 05:20  | 06:22     | 07:22   | 07:28    | 08:28    |
|                             | 15:50   | 16:51    | 17:53 | 19:58 | 21:00 | 21:55 | 22:04 | 21:17  | 20:02     | 18:41   | 16:25    | 15:39    |
| 6                           | 08:46   | 08:03    | 06:56 | 06:33 | 05:19 | 04:28 | 04:32 | 05:22  | 06:24     | 07:24   | 07:30    | 08:29    |
|                             | 15:52   | 16:53    | 17:55 | 20:00 | 21:02 | 21:56 | 22:04 | 21:15  | 19:59     | 18:38   | 16:23    | 15:38    |
| 7                           | 08:46   | 08:01    | 06:53 | 06:31 | 05:17 | 04:27 | 04:33 | 05:24  | 06:26     | 07:26   | 07:32    | 08:31    |
|                             | 15:53   | 16:55    | 17:57 | 20:02 | 21:04 | 21:57 | 22:03 | 21:13  | 19:56     | 18:36   | 16:21    | 15:38    |
| 8                           | 08:45   | 07:58    | 06:51 | 06:28 | 05:15 | 04:27 | 04:34 | 05:26  | 06:28     | 07:28   | 07:34    | 08:32    |
|                             | 15:55   | 16:57    | 17:59 | 20:04 | 21:06 | 21:58 | 22:02 | 21:11  | 19:54     | 18:33   | 16:19    | 15:37    |
| 9                           | 08:44   | 07:56    | 06:48 | 06:26 | 05:13 | 04:26 | 04:35 | 05:28  | 06:30     | 07:30   | 07:37    | 08:33    |
|                             | 15:56   | 17:00    | 18:01 | 20:06 | 21:09 | 21:59 | 22:01 | 21:09  | 19:51     | 18:30   | 16:17    | 15:37    |
| 10                          | 08:44   | 07:54    | 06:45 | 06:23 | 05:10 | 04:25 | 04:36 | 05:30  | 06:32     | 07:32   | 07:39    | 08:35    |
|                             | 15:58   | 17:02    | 18:04 | 20:08 | 21:11 | 22:00 | 22:00 | 21:06  | 19:48     | 18:28   | 16:15    | 15:36    |
| 11                          | 08:43   | 07:52    | 06:43 | 06:20 | 05:08 | 04:25 | 04:38 | 05:32  | 06:34     | 07:35   | 07:41    | 08:36    |
|                             | 15:59   | 17:04    | 18:06 | 20:10 | 21:13 | 22:01 | 21:59 | 21:04  | 19:45     | 18:25   | 16:13    | 15:36    |
| 12                          | 08:42   | 07:50    | 06:40 | 06:18 | 05:06 | 04:24 | 04:39 | 05:34  | 06:36     | 07:37   | 07:43    | 08:37    |
|                             | 16:01   | 17:06    | 18:08 | 20:13 | 21:14 | 22:02 | 21:58 | 21:02  | 19:43     | 18:23   | 16:11    | 15:35    |
| 13                          | 08:41   | 07:47    | 06:38 | 06:15 | 05:04 | 04:24 | 04:40 | 05:36  | 06:38     | 07:39   | 07:45    | 08:39    |
|                             | 16:03   | 17:09    | 18:10 | 20:15 | 21:16 | 22:03 | 21:57 | 21:00  | 19:40     | 18:20   | 16:09    | 15:35    |
| 14                          | 08:40   | 07:45    | 06:35 | 06:13 | 05:02 | 04:23 | 04:42 | 05:38  | 06:40     | 07:41   | 07:47    | 08:40    |
|                             | 16:05   | 17:11    | 18:12 | 20:17 | 21:18 | 22:04 | 21:56 | 20:57  | 19:37     | 18:18   | 16:07    | 15:35    |
| 15                          | 08:39   | 07:43    | 06:32 | 06:10 | 05:00 | 04:23 | 04:43 | 05:40  | 06:42     | 07:43   | 07:50    | 08:41    |
|                             | 16:07   | 17:13    | 18:14 | 20:19 | 21:20 | 22:04 | 21:54 | 20:55  | 19:35     | 18:15   | 16:05    | 15:35    |
| 16                          | 08:38   | 07:41    | 06:30 | 06:07 | 04:58 | 04:23 | 04:45 | 05:42  | 06:44     | 07:45   | 07:52    | 08:42    |
|                             | 16:08   | 17:15    | 18:16 | 20:21 | 21:22 | 22:05 | 21:53 | 20:52  | 19:32     | 18:12   | 16:04    | 15:35    |
| 17                          | 08:36   | 07:38    | 06:27 | 06:05 | 04:57 | 04:23 | 04:46 | 05:44  | 06:46     | 07:47   | 07:54    | 08:43    |
|                             | 16:10   | 17:18    | 18:18 | 20:23 | 21:24 | 22:06 | 21:52 | 20:50  | 19:29     | 18:10   | 16:02    | 15:35    |
| 18                          | 08:35   | 07:36    | 06:24 | 06:02 | 04:55 | 04:22 | 04:48 | 05:46  | 06:48     | 07:49   | 07:56    | 08:43    |
|                             | 16:12   | 17:20    | 18:20 | 20:25 | 21:26 | 22:06 | 21:50 | 20:48  | 19:27     | 18:07   | 16:00    | 15:35    |
| 19                          | 08:34   | 07:33    | 06:22 | 06:00 | 04:53 | 04:22 | 04:49 | 05:48  | 06:50     | 07:51   | 07:58    | 08:44    |
|                             | 16:14   | 17:22    | 18:23 | 20:27 | 21:28 | 22:07 | 21:49 | 20:45  | 19:24     | 18:05   | 15:58    | 15:35    |
| 20                          | 08:32   | 07:31    | 06:19 | 05:57 | 04:51 | 04:22 | 04:51 | 05:50  | 06:52     | 07:53   | 08:00    | 08:45    |
|                             | 16:16   | 17:24    | 18:25 | 20:29 | 21:30 | 22:07 | 21:47 | 20:43  | 19:21     | 18:02   | 15:57    | 15:36    |
| 21                          | 08:31   | 07:29    | 06:16 | 05:55 | 04:49 | 04:23 | 04:53 | 05:52  | 06:54     | 07:56   | 08:02    | 08:46    |
|                             | 16:18   | 17:27    | 18:27 | 20:31 | 21:32 | 22:07 | 21:46 | 20:40  | 19:19     | 18:00   | 15:55    | 15:36    |
| 22                          | 08:30   | 07:26    | 06:14 | 05:52 | 04:48 | 04:23 | 04:54 | 05:54  | 06:56     | 07:58   | 08:04    | 08:46    |
|                             | 16:20   | 17:29    | 18:29 | 20:33 | 21:33 | 22:08 | 21:44 | 20:38  | 19:16     | 17:57   | 15:54    | 15:37    |
| 23                          | 08:28   | 07:24    | 06:11 | 05:50 | 04:46 | 04:23 | 04:56 | 05:56  | 06:58     | 08:00   | 08:06    | 08:47    |
|                             | 16:22   | 17:31    | 18:31 | 20:36 | 21:35 | 22:08 | 21:42 | 20:35  | 19:13     | 17:55   | 15:52    | 15:37    |
| 24                          | 08:27   | 07:21    | 06:08 | 05:47 | 04:44 | 04:23 | 04:58 | 05:58  | 07:00     | 08:02   | 08:08    | 08:47    |
|                             | 16:24   | 17:33    | 18:33 | 20:38 | 21:37 | 22:08 | 21:41 | 20:33  | 19:10     | 17:53   | 15:51    | 15:38    |
| 25                          | 08:25   | 07:19    | 06:06 | 05:45 | 04:43 | 04:24 | 05:00 | 06:00  | 07:02     | 08:04   | 08:10    | 08:48    |
|                             | 16:27   | 17:35    | 18:35 | 20:40 | 21:39 | 22:08 | 21:39 | 20:30  | 19:08     | 17:50   | 15:50    | 15:38    |
| 26                          | 08:23   | 07:16    | 06:03 | 05:42 | 04:41 | 04:24 | 05:01 | 06:02  | 07:04     | 08:06   | 08:12    | 08:48    |
|                             | 16:29   | 17:38    | 18:37 | 20:42 | 21:40 | 22:08 | 21:37 | 20:28  | 19:05     | 16:48   | 15:48    | 15:39    |
| 27                          | 08:22   | 07:14    | 06:00 | 05:40 | 04:40 | 04:24 | 05:03 | 06:04  | 07:06     | 08:08   | 08:14    | 08:48    |
|                             | 16:31   | 17:40    | 18:39 | 20:44 | 21:42 | 22:08 | 21:35 | 20:25  | 19:02     | 16:45   | 15:47    | 15:40    |
| 28                          | 08:20   | 07:11    | 05:57 | 05:38 | 04:39 | 04:25 | 05:05 | 06:06  | 07:08     | 08:11   | 08:16    | 08:48    |
|                             | 16:33   | 17:42    | 18:41 | 20:46 | 21:43 | 22:07 | 21:34 | 20:22  | 19:00     | 16:43   | 15:46    | 15:41    |
| 29                          | 08:18   |          | 05:55 | 05:35 | 04:37 | 04:26 | 05:07 | 06:08  | 07:10     | 08:13   | 08:17    | 08:48    |
|                             | 16:35   |          | 18:43 | 20:48 | 21:45 | 22:07 | 21:32 | 20:20  | 18:57     | 16:41   | 15:45    | 15:42    |
| 30                          | 08:16   |          | 06:52 | 05:33 | 04:36 | 04:26 | 05:09 | 06:10  | 07:12     | 08:15   | 08:19    | 08:48    |
|                             | 16:37   |          | 19:46 | 20:50 | 21:47 | 22:07 | 21:30 | 20:17  | 18:54     | 16:38   | 15:44    | 15:43    |
| 31                          | 08:14   |          | 06:49 |       | 04:35 |       | 05:11 | 06:12  |           | 07:17   |          | 08:48    |
|                             | 16:40   |          | 19:48 |       | 21:48 |       | 21:28 | 20:15  |           | 16:36   |          | 15:44    |
| Potential sun hours         | 235     | 265      | 365   | 425   | 507   | 529   | 529   | 470    | 385       | 324     | 248      | 216      |
| Sum of minutes with flicker | 0       | 0        | 0     | 0     | 0     | 0     | 0     | 0      | 0         | 0       | 0        | 0        |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 18 - 08-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January                      | February                      | March                         | April                         | May            | June           |
|-----------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|----------------|
| 1                           | 08:48<br>15:45               | 08:13 08:46-08:55/9<br>16:42  | 07:09<br>17:44                | 06:47 07:23-07:50/27<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 |
| 2                           | 08:48<br>15:46               | 08:11 08:44-08:57/13<br>16:44 | 07:06<br>17:46                | 06:44 07:23-07:51/28<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 |
| 3                           | 08:48<br>15:47               | 08:09 08:42-08:59/17<br>16:46 | 07:04<br>17:49                | 06:41 07:23-07:50/27<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 |
| 4                           | 08:47<br>15:49               | 08:07 08:39-08:59/20<br>16:48 | 07:01<br>17:51                | 06:39 07:23-07:48/25<br>19:56 | 05:24<br>20:58 | 04:30<br>21:54 |
| 5                           | 08:47<br>15:50               | 08:05 08:37-09:00/23<br>16:51 | 06:59<br>17:53                | 06:36 07:24-07:48/24<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 |
| 6                           | 08:46<br>15:52               | 08:03 08:37-09:01/24<br>16:53 | 06:56<br>17:55                | 06:33 07:24-07:46/22<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 |
| 7                           | 08:46<br>15:53               | 08:01 08:37-09:02/25<br>16:55 | 06:53<br>17:57                | 06:31 07:25-07:45/20<br>20:02 | 05:17<br>21:05 | 04:27<br>21:57 |
| 8                           | 08:45<br>15:55               | 07:58 08:36-09:02/26<br>16:57 | 06:51<br>17:59                | 06:28 07:26-07:43/17<br>20:04 | 05:15<br>21:07 | 04:27<br>21:58 |
| 9                           | 08:44<br>15:56               | 07:56 08:36-09:02/26<br>17:00 | 06:48<br>18:01                | 06:26 07:28-07:40/12<br>20:06 | 05:13<br>21:09 | 04:26<br>21:59 |
| 10                          | 08:44<br>15:58               | 07:54 08:36-09:03/27<br>17:02 | 06:45<br>18:04                | 06:23<br>20:08                | 05:10<br>21:11 | 04:25<br>22:00 |
| 11                          | 08:43<br>15:59               | 07:52 08:36-09:02/26<br>17:04 | 06:43<br>18:06                | 06:20<br>20:11                | 05:08<br>21:13 | 04:25<br>22:01 |
| 12                          | 08:42<br>16:01               | 07:50 08:37-09:02/25<br>17:06 | 06:40<br>18:08                | 06:18<br>20:13                | 05:06<br>21:15 | 04:24<br>22:02 |
| 13                          | 08:41<br>16:03               | 07:47 08:37-09:01/24<br>17:09 | 06:38<br>18:10                | 06:15<br>20:15                | 05:04<br>21:17 | 04:24<br>22:03 |
| 14                          | 08:40<br>16:05               | 07:45 08:38-09:01/23<br>17:11 | 06:35<br>18:12                | 06:13<br>20:17                | 05:02<br>21:18 | 04:23<br>22:04 |
| 15                          | 08:39<br>16:07               | 07:43 08:39-09:01/22<br>17:13 | 06:32<br>18:14                | 06:10<br>20:19                | 05:00<br>21:20 | 04:23<br>22:05 |
| 16                          | 08:38<br>16:08               | 07:41 08:39-08:59/20<br>17:15 | 06:30<br>18:16                | 06:07<br>20:21                | 04:58<br>21:22 | 04:23<br>22:05 |
| 17                          | 08:36<br>16:10               | 07:38 08:41-08:58/17<br>17:18 | 06:27<br>18:18                | 06:05<br>20:23                | 04:57<br>21:24 | 04:23<br>22:06 |
| 18                          | 08:35<br>16:12               | 07:36 08:43-08:55/12<br>17:20 | 06:24<br>18:20                | 06:02<br>20:25                | 04:55<br>21:26 | 04:22<br>22:06 |
| 19                          | 08:34<br>16:14               | 07:34 08:48-08:51/3<br>17:22  | 06:22<br>18:23                | 06:00<br>20:27                | 04:53<br>21:28 | 04:22<br>22:07 |
| 20                          | 08:33<br>16:16               | 07:31<br>17:24                | 06:19<br>18:25                | 05:57<br>20:29                | 04:51<br>21:30 | 04:22<br>22:07 |
| 21                          | 08:31<br>16:18               | 07:29<br>17:27                | 06:16<br>18:27                | 05:55<br>20:31                | 04:49<br>21:32 | 04:22<br>22:07 |
| 22                          | 08:30<br>16:20               | 07:26<br>17:29                | 06:14<br>18:29                | 05:52<br>20:33                | 04:48<br>21:33 | 04:23<br>22:08 |
| 23                          | 08:28<br>16:22               | 07:24<br>17:31                | 06:11<br>18:31                | 05:50<br>20:36                | 04:46<br>21:35 | 04:23<br>22:08 |
| 24                          | 08:27<br>16:24               | 07:21<br>17:33                | 06:08 06:36-06:46/10<br>18:33 | 05:47<br>20:38                | 04:44<br>21:37 | 04:23<br>22:08 |
| 25                          | 08:25<br>16:27               | 07:19<br>17:35                | 06:06 06:33-06:48/15<br>18:35 | 05:45<br>20:40                | 04:43<br>21:39 | 04:24<br>22:08 |
| 26                          | 08:23<br>16:29               | 07:16<br>17:38                | 06:03 06:30-06:49/19<br>18:37 | 05:42<br>20:42                | 04:41<br>21:40 | 04:24<br>22:08 |
| 27                          | 08:22<br>16:31               | 07:14<br>17:40                | 06:00 06:28-06:50/22<br>18:39 | 05:40<br>20:44                | 04:40<br>21:42 | 04:24<br>22:08 |
| 28                          | 08:20<br>16:33               | 07:11<br>17:42                | 05:57 06:26-06:51/25<br>18:41 | 05:38<br>20:46                | 04:39<br>21:44 | 04:25<br>22:08 |
| 29                          | 08:18<br>16:35               |                               | 05:55 06:25-06:51/26<br>18:43 | 05:35<br>20:48                | 04:37<br>21:45 | 04:26<br>22:07 |
| 30                          | 08:16<br>16:37               |                               | 06:52 07:25-07:51/26<br>19:46 | 05:33<br>20:50                | 04:36<br>21:47 | 04:26<br>22:07 |
| 31                          | 08:15 08:48-08:52/4<br>16:40 |                               | 06:49 07:24-07:51/27<br>19:48 |                               | 04:35<br>21:48 |                |
| Potential sun hours         | 235                          | 265                           | 365                           | 425                           | 507            | 529            |
| Sum of minutes with flicker | 4                            | 382                           | 170                           | 202                           | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 18 - 08-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July           | August         | September      | October        | November                | December       |
|-----------------------------|----------------|----------------|----------------|----------------|-------------------------|----------------|
| 1                           | 04:27<br>22:07 | 05:12<br>21:26 | 06:14<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34          | 08:21<br>15:43 |
| 2                           | 04:28<br>22:06 | 05:14<br>21:24 | 06:16<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32          | 08:23<br>15:42 |
| 3                           | 04:29<br>22:06 | 05:16<br>21:22 | 06:18<br>20:07 | 07:18<br>18:46 | 07:24<br>16:29          | 08:24<br>15:41 |
| 4                           | 04:30<br>22:05 | 05:18<br>21:20 | 06:20<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27          | 08:26<br>15:40 |
| 5                           | 04:31<br>22:04 | 05:20<br>21:18 | 06:22<br>20:02 | 07:22<br>18:41 | 07:28<br>16:25          | 08:28<br>15:39 |
| 6                           | 04:32<br>22:04 | 05:22<br>21:15 | 06:24<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23          | 08:29<br>15:38 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21          | 08:31<br>15:38 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54 | 07:28<br>18:33 | 07:35<br>16:19          | 08:32<br>15:37 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51 | 07:30<br>18:30 | 07:37<br>16:17          | 08:34<br>15:37 |
| 10                          | 04:36<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15          | 08:35<br>15:36 |
| 11                          | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46 | 07:35<br>18:25 | 07:41<br>16:13          | 08:36<br>15:36 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43 | 07:37<br>18:23 | 07:43<br>16:11          | 08:37<br>15:35 |
| 13                          | 04:40<br>21:57 | 05:36<br>21:00 | 06:38<br>19:40 | 07:39<br>18:20 | 07:45<br>16:09          | 08:39<br>15:35 |
| 14                          | 04:42<br>21:56 | 05:38<br>20:57 | 06:40<br>19:37 | 07:41<br>18:18 | 07:47<br>16:07          | 08:40<br>15:35 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35 | 07:43<br>18:15 | 07:50<br>16:05          | 08:41<br>15:35 |
| 16                          | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32 | 07:45<br>18:12 | 07:52<br>16:04          | 08:42<br>15:35 |
| 17                          | 04:46<br>21:52 | 05:44<br>20:50 | 06:46<br>19:29 | 07:47<br>18:10 | 07:54<br>16:02          | 08:43<br>15:35 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27 | 07:49<br>18:07 | 07:56<br>16:00          | 08:44<br>15:35 |
| 19                          | 04:49<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24 | 07:51<br>18:05 | 07:58<br>15:58          | 08:44<br>15:35 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21 | 07:53<br>18:02 | 08:00<br>15:57          | 08:45<br>15:36 |
| 21                          | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19 | 07:56<br>18:00 | 08:02<br>15:55          | 08:46<br>15:36 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16 | 07:58<br>17:57 | 08:04<br>15:54          | 08:46<br>15:36 |
| 23                          | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13 | 08:00<br>17:55 | 08:06<br>15:52          | 08:47<br>15:37 |
| 24                          | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10 | 08:02<br>17:53 | 09:13-09:24/11<br>15:51 | 08:47<br>15:38 |
| 25                          | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08 | 08:04<br>17:50 | 09:12-09:27/15<br>15:50 | 08:48<br>15:38 |
| 26                          | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05 | 07:06<br>16:48 | 08:10-08:28/18<br>15:48 | 08:48<br>15:39 |
| 27                          | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02 | 07:08<br>16:45 | 08:08-08:29/21<br>15:47 | 08:48<br>15:40 |
| 28                          | 05:05<br>21:34 | 06:06<br>20:22 | 07:08<br>19:00 | 07:11<br>16:43 | 08:08-08:31/23<br>15:46 | 08:48<br>15:41 |
| 29                          | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57 | 07:13<br>16:41 | 08:07-08:31/24<br>15:45 | 08:48<br>15:42 |
| 30                          | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54 | 07:15<br>16:38 | 08:06-08:31/25<br>15:44 | 08:48<br>15:43 |
| 31                          | 05:11<br>21:28 | 06:12<br>20:15 |                | 07:17<br>16:36 | 08:06-08:32/26<br>15:44 | 08:48<br>15:44 |
| Potential sun hours         | 530            | 470            | 385            | 324            | 248                     | 216            |
| Sum of minutes with flicker | 0              | 0              | 384            | 163            | 224                     | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 19 - 03-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January                                      | February                                     | March                                        | April                                        | May                                          | June                       |
|-----------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------|
| 1                           | 08:48 09:39-09:57/18<br>15:45 10:18-10:41/23 | 08:13 09:41-10:16/35<br>16:42 09:42-10:16/34 | 07:09 17:44<br>07:06 17:46                   | 06:47 19:50<br>06:44 07:26-07:43/17          | 05:30 06:40-06:56/16<br>20:52 07:12-07:41/29 | 04:33 21:50<br>04:32 21:51 |
| 2                           | 08:48 09:39-09:59/20<br>15:46 10:20-10:41/21 | 08:11 09:42-10:16/34<br>16:44 09:43-10:15/32 | 07:04 17:46<br>07:04 17:49                   | 06:41 07:22-07:46/24<br>19:54 07:19-07:47/28 | 20:54 07:13-07:40/27<br>05:26 07:14-07:37/23 | 21:51 04:31<br>21:52 04:30 |
| 3                           | 08:48 09:38-09:59/21<br>15:48 10:20-10:41/21 | 08:09 09:43-10:15/32<br>16:46 09:43-10:14/31 | 07:01 17:51<br>07:01 17:51                   | 06:39 07:19-07:47/28<br>19:56 07:17-07:50/33 | 05:24 07:17-07:34/17<br>20:58 07:21-07:29/8  | 21:54 04:29<br>21:55 04:28 |
| 4                           | 08:47 09:39-10:01/22<br>15:49 10:21-10:42/21 | 08:07 09:43-10:14/31<br>16:49 09:44-10:13/29 | 07:01 17:51<br>06:59 17:53                   | 06:39 07:19-07:47/28<br>19:58 07:15-07:50/35 | 05:21 07:21-07:29/8<br>21:00 21:03           | 21:54 04:28<br>21:56 04:27 |
| 5                           | 08:47 09:38-10:02/24<br>15:50 10:22-10:41/19 | 08:05 09:44-10:13/29<br>16:51 10:23-10:41/18 | 06:59 17:53<br>06:56 17:55                   | 06:36 07:17-07:50/33<br>19:58 07:14-07:52/38 | 05:21 07:21-07:29/8<br>21:00 21:03           | 21:55 04:28<br>21:57 04:27 |
| 6                           | 08:46 09:38-10:03/25<br>15:52 10:23-10:41/18 | 08:03 09:46-10:12/26<br>16:53 10:24-10:41/17 | 06:56 17:55<br>06:53 17:57                   | 06:34 07:15-07:50/35<br>20:00 07:14-07:52/38 | 05:19 21:03<br>05:17 21:05                   | 04:28 21:57<br>04:27 21:58 |
| 7                           | 08:46 09:37-10:04/27<br>15:53 10:24-10:41/17 | 08:01 09:48-10:11/23<br>16:55 09:49-10:08/19 | 06:53 17:57<br>06:51 17:59                   | 06:31 07:14-07:52/38<br>20:02 07:12-07:52/40 | 05:17 21:05<br>05:15 21:07                   | 04:27 21:58<br>04:26 22:00 |
| 8                           | 08:45 09:37-10:04/27<br>15:55 10:25-10:40/15 | 07:59 09:49-10:08/19<br>16:57 09:53-10:05/12 | 06:51 17:59<br>06:48 07:16-07:21/5           | 06:28 07:12-07:52/40<br>20:04 07:11-07:53/42 | 05:15 21:07<br>05:13 21:09                   | 04:27 21:58<br>04:26 22:00 |
| 9                           | 08:44 09:37-10:05/28<br>15:56 10:26-10:40/14 | 07:56 09:53-10:05/12<br>17:00 09:54-10:06/29 | 06:48 07:16-07:21/5<br>18:01 07:14-07:24/10  | 06:26 07:11-07:53/42<br>20:06 07:10-07:54/44 | 05:13 21:09<br>05:10 21:11                   | 04:26 22:00<br>04:25 22:01 |
| 10                          | 08:44 09:37-10:06/29<br>15:58 10:28-10:39/11 | 07:54 09:54-10:06/29<br>17:02 09:52-10:08/31 | 06:46 07:14-07:24/10<br>18:04 07:11-07:25/14 | 06:23 07:10-07:54/44<br>20:08 06:48-06:57/9  | 05:10 21:11<br>05:08 21:13                   | 04:25 22:01<br>04:25 22:01 |
| 11                          | 08:43 09:37-10:08/31<br>16:00 10:30-10:38/8  | 07:52 09:52-10:08/31<br>17:04 10:30-10:38/8  | 06:43 07:11-07:25/14<br>18:06 07:08-07:25/17 | 06:20 06:48-06:57/9<br>20:11 07:09-07:54/45  | 05:08 21:13<br>05:06 21:15                   | 04:25 22:01<br>04:24 22:02 |
| 12                          | 08:42 09:37-10:09/32<br>16:01 10:31-10:39/7  | 07:50 10:31-10:39/7<br>17:06 10:31-10:39/7   | 06:40 07:08-07:25/17<br>18:08 07:06-07:26/20 | 06:18 06:46-07:01/15<br>20:13 07:08-07:54/46 | 05:06 21:15<br>05:04 21:17                   | 04:24 22:03<br>04:24 22:03 |
| 13                          | 08:41 09:37-10:10/33<br>16:03 10:32-10:40/6  | 07:48 10:32-10:40/6<br>17:09 10:32-10:40/6   | 06:38 07:06-07:26/20<br>18:10 07:03-07:26/23 | 06:15 06:43-07:02/19<br>20:15 07:07-07:54/47 | 05:04 21:17<br>05:02 21:18                   | 04:24 22:03<br>04:23 22:04 |
| 14                          | 08:40 09:36-10:10/34<br>16:05 10:33-10:41/5  | 07:45 10:33-10:41/5<br>17:11 10:33-10:41/5   | 06:35 07:03-07:26/23<br>18:12 07:02-07:26/24 | 06:13 06:41-07:04/23<br>20:17 07:07-07:55/48 | 05:02 21:18<br>05:00 21:20                   | 04:23 22:04<br>04:23 22:05 |
| 15                          | 08:39 09:37-10:11/34<br>16:07 10:34-10:42/4  | 07:43 10:34-10:42/4<br>17:13 10:34-10:42/4   | 06:32 07:02-07:26/24<br>18:14 07:02-07:25/23 | 06:10 06:38-07:04/26<br>20:19 07:06-07:54/48 | 05:00 21:20<br>04:58 21:22                   | 04:23 22:05<br>04:23 22:05 |
| 16                          | 08:38 09:37-10:12/35<br>16:08 10:35-10:43/3  | 07:41 10:35-10:43/3<br>17:15 10:35-10:43/3   | 06:30 07:02-07:25/23<br>18:16 07:03-07:25/22 | 06:07 06:37-07:05/28<br>20:21 07:06-07:54/48 | 04:58 21:22<br>04:57 21:24                   | 04:23 22:05<br>04:23 22:06 |
| 17                          | 08:36 09:37-10:12/35<br>16:10 10:36-10:44/2  | 07:38 10:36-10:44/2<br>17:18 10:36-10:44/2   | 06:27 07:03-07:25/22<br>18:18 07:02-07:24/22 | 06:05 06:36-07:54/78<br>20:23 06:36-07:54/78 | 04:57 21:24<br>04:55 21:26                   | 04:23 22:06<br>04:22 22:06 |
| 18                          | 08:35 09:37-10:14/37<br>16:12 10:37-10:45/1  | 07:36 10:37-10:45/1<br>17:20 10:37-10:45/1   | 06:24 07:02-07:24/22<br>18:21 07:03-07:23/20 | 06:02 06:36-07:54/78<br>20:25 06:34-07:51/77 | 04:55 21:26<br>04:53 21:28                   | 04:22 22:06<br>04:22 22:07 |
| 19                          | 08:34 09:37-10:14/37<br>16:14 10:38-10:46/0  | 07:34 10:38-10:46/0<br>17:22 10:38-10:46/0   | 06:22 07:03-07:23/20<br>18:23 07:04-07:22/18 | 06:00 06:34-07:53/79<br>20:27 06:34-07:53/79 | 04:53 21:28<br>04:51 21:30                   | 04:22 22:07<br>04:22 22:07 |
| 20                          | 08:33 09:37-10:14/37<br>16:16 10:39-10:47/0  | 07:31 10:39-10:47/0<br>17:24 10:39-10:47/0   | 06:19 07:04-07:22/18<br>18:25 07:05-07:20/15 | 05:57 06:34-07:53/79<br>20:29 06:35-07:53/78 | 04:51 21:30<br>04:49 21:32                   | 04:22 22:07<br>04:23 22:07 |
| 21                          | 08:31 09:37-10:15/38<br>16:18 10:40-10:48/0  | 07:29 10:40-10:48/0<br>17:27 10:40-10:48/0   | 06:16 07:05-07:20/15<br>18:27 07:06-07:17/11 | 05:55 06:35-07:53/78<br>20:31 06:34-07:51/77 | 04:49 21:32<br>04:48 21:33                   | 04:23 22:07<br>04:23 22:08 |
| 22                          | 08:30 09:37-10:16/39<br>16:20 10:41-10:49/0  | 07:26 10:41-10:49/0<br>17:29 10:41-10:49/0   | 06:14 07:06-07:17/11<br>18:29 06:11-07:04/30 | 05:52 06:34-07:51/77<br>20:33 06:34-07:51/45 | 04:48 21:33<br>04:46 21:35                   | 04:23 22:08<br>04:23 22:08 |
| 23                          | 08:28 09:37-10:16/39<br>16:22 10:42-10:50/0  | 07:24 10:42-10:50/0<br>17:31 10:42-10:50/0   | 06:11 07:04-07:15/10<br>18:31 07:05-07:15/10 | 05:50 06:34-07:51/31<br>20:36 07:06-07:51/45 | 04:46 21:35<br>04:44 21:37                   | 04:23 22:08<br>04:23 22:08 |
| 24                          | 08:27 09:37-10:16/39<br>16:25 10:43-10:51/0  | 07:21 10:43-10:51/0<br>17:33 10:43-10:51/0   | 06:08 07:05-07:15/10<br>18:33 07:06-07:15/10 | 05:47 06:34-07:51/30<br>20:38 07:05-07:50/45 | 04:44 21:37<br>04:43 21:39                   | 04:23 22:08<br>04:24 22:08 |
| 25                          | 08:25 09:37-10:16/39<br>16:27 10:44-10:52/0  | 07:19 10:44-10:52/0<br>17:35 10:44-10:52/0   | 06:06 07:06-07:15/10<br>18:35 07:07-07:15/10 | 05:45 06:34-07:50/39<br>20:40 07:06-07:49/43 | 04:43 21:39<br>04:41 21:40                   | 04:24 22:08<br>04:24 22:08 |
| 26                          | 08:23 09:38-10:16/38<br>16:29 10:45-10:53/0  | 07:16 10:45-10:53/0<br>17:38 10:45-10:53/0   | 06:03 07:07-07:15/10<br>18:37 07:08-07:15/10 | 05:42 06:35-07:03/28<br>20:42 07:07-07:48/41 | 04:41 21:40<br>04:40 21:42                   | 04:24 22:08<br>04:24 22:08 |
| 27                          | 08:22 09:38-10:16/38<br>16:31 10:46-10:54/0  | 07:14 10:46-10:54/0<br>17:40 10:46-10:54/0   | 06:00 07:08-07:15/10<br>18:39 07:09-07:15/10 | 05:40 06:36-07:02/26<br>20:44 07:08-07:47/39 | 04:40 21:42<br>04:39 21:44                   | 04:24 22:08<br>04:25 22:08 |
| 28                          | 08:20 09:38-10:16/38<br>16:33 10:47-10:55/0  | 07:11 10:47-10:55/0<br>17:42 10:47-10:55/0   | 05:58 07:09-07:15/10<br>18:41 07:10-07:15/10 | 05:38 06:36-07:00/24<br>20:46 07:08-07:45/37 | 04:39 21:44<br>04:37 21:46                   | 04:25 22:08<br>04:26 22:07 |
| 29                          | 08:18 09:39-10:16/37<br>16:35 10:48-10:56/0  | 07:09 10:48-10:56/0<br>17:44 10:48-10:56/0   | 05:55 07:10-07:15/10<br>18:44 07:11-07:15/10 | 05:35 06:37-06:59/22<br>20:48 07:09-07:44/35 | 04:37 21:46<br>04:36 21:48                   | 04:26 22:07<br>04:26 22:07 |
| 30                          | 08:16 09:39-10:16/37<br>16:37 10:49-10:57/0  | 07:07 10:49-10:57/0<br>17:46 10:49-10:57/0   | 06:52 07:11-07:15/10<br>19:46 07:12-07:15/10 | 05:33 06:38-06:58/20<br>20:50 07:10-07:43/33 | 04:36 21:47<br>04:35 21:48                   | 04:26 22:07<br>04:35 22:07 |
| 31                          | 08:15 09:40-10:16/36<br>16:40 10:50-10:58/0  | 07:06 10:50-10:58/0<br>17:48 10:50-10:58/0   | 06:50 07:12-07:15/10<br>19:48 07:13-07:15/10 | 05:32 07:11-07:15/10<br>20:50 07:10-07:43/33 | 04:35 21:48<br>04:34 21:49                   | 04:35 22:07<br>04:34 22:07 |
| Potential sun hours         | 235                                          | 265                                          | 365                                          | 425                                          | 507                                          | 529                        |
| Sum of minutes with flicker | 1192                                         | 241                                          | 244                                          | 1700                                         | 132                                          | 0                          |

Table layout: For each day in each month the following matrix apply

|              |                  |                                 |                                |                      |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 19 - 03-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July  |       | August         |  | September |                | October |                | November |                | December |                |                |
|-----------------------------|-------|-------|----------------|--|-----------|----------------|---------|----------------|----------|----------------|----------|----------------|----------------|
| 1                           | 04:27 | 05:12 |                |  | 06:14     | 06:46-06:58/12 | 07:14   | 07:45-08:05/20 | 07:19    |                | 08:21    | 09:19-09:50/31 |                |
|                             | 22:07 | 21:26 |                |  | 20:12     | 07:07-07:53/46 | 18:52   |                | 16:34    |                | 15:43    | 10:14-10:17/3  |                |
| 2                           | 04:28 | 05:14 |                |  | 06:16     | 06:48-06:54/6  | 07:16   | 07:47-08:04/17 | 07:22    | 09:24-09:34/10 | 08:23    | 09:20-09:50/30 |                |
|                             | 22:06 | 21:24 |                |  | 20:09     | 07:08-07:52/44 | 18:49   |                | 16:32    |                | 15:42    | 10:12-10:21/9  |                |
| 3                           | 04:29 | 05:16 |                |  | 06:18     | 07:08-07:51/43 | 07:18   | 07:49-08:03/14 | 07:24    | 09:20-09:37/17 | 08:24    | 09:21-09:50/29 |                |
|                             | 22:06 | 21:22 |                |  | 20:07     |                | 18:46   |                | 16:30    |                | 15:41    | 10:11-10:23/12 |                |
| 4                           | 04:30 | 05:18 |                |  | 06:20     | 07:09-07:50/41 | 07:20   | 07:51-08:01/10 | 07:26    | 09:18-09:39/21 | 08:26    | 09:22-09:50/28 |                |
|                             | 22:05 | 21:20 |                |  | 20:04     |                | 18:44   |                | 16:27    |                | 15:40    | 10:10-10:25/15 |                |
| 5                           | 04:31 | 05:20 |                |  | 06:22     | 07:10-07:49/39 | 07:22   | 07:53-07:58/5  | 07:28    | 09:17-09:41/24 | 08:28    | 09:23-09:50/27 |                |
|                             | 22:04 | 21:18 |                |  | 20:02     |                | 18:41   |                | 16:25    |                | 15:39    | 10:10-10:26/16 |                |
| 6                           | 04:32 | 05:22 |                |  | 06:24     | 07:11-07:48/37 | 07:24   |                | 07:30    | 09:15-09:43/28 | 08:29    | 09:23-09:49/26 |                |
|                             | 22:04 | 21:15 |                |  | 19:59     |                | 18:38   |                | 16:23    |                | 15:38    | 10:09-10:27/18 |                |
| 7                           | 04:33 | 05:24 |                |  | 06:26     | 07:12-07:46/34 | 07:26   |                | 07:32    | 09:14-09:44/30 | 08:31    | 09:25-09:49/24 |                |
|                             | 22:03 | 21:13 |                |  | 19:56     |                | 18:36   |                | 16:21    |                | 15:38    | 10:09-10:28/19 |                |
| 8                           | 04:34 | 05:26 | 07:33-07:36/3  |  | 06:28     | 07:13-07:44/31 | 07:28   |                | 07:35    | 09:13-09:45/32 | 08:32    | 09:26-09:49/23 |                |
|                             | 22:02 | 21:11 |                |  | 19:54     |                | 18:33   |                | 16:19    |                | 15:37    | 10:09-10:29/20 |                |
| 9                           | 04:35 | 05:28 | 07:27-07:42/15 |  | 06:30     | 07:14-07:41/27 | 07:30   |                | 07:37    | 09:12-09:45/33 | 08:34    | 09:27-09:49/22 |                |
|                             | 22:01 | 21:09 |                |  | 19:51     |                | 18:31   |                | 16:17    |                | 15:37    | 10:09-10:29/20 |                |
| 10                          | 04:36 | 05:30 | 07:24-07:45/21 |  | 06:32     | 07:16-07:38/22 | 07:33   |                | 07:39    | 09:12-09:47/35 | 08:35    | 09:28-09:49/21 |                |
|                             | 22:00 | 21:07 |                |  | 19:48     |                | 18:28   |                | 16:15    |                | 15:36    | 10:10-10:31/21 |                |
| 11                          | 04:38 | 05:32 | 06:52-07:01/9  |  | 06:34     | 07:20-07:34/14 | 07:35   |                | 07:41    | 09:11-09:47/36 | 08:36    | 09:29-09:48/19 |                |
|                             | 21:59 | 21:04 | 07:22-07:48/26 |  | 19:46     |                | 18:25   |                | 16:13    |                | 15:36    | 10:09-10:31/22 |                |
| 12                          | 04:39 | 05:34 | 06:49-07:04/15 |  | 06:36     |                | 07:37   |                | 07:43    | 09:12-09:48/36 | 08:37    | 09:30-09:48/18 |                |
|                             | 21:58 | 21:02 | 07:21-07:50/29 |  | 19:43     |                | 18:23   |                | 16:11    |                | 15:36    | 10:09-10:32/23 |                |
| 13                          | 04:40 | 05:36 | 06:46-07:05/19 |  | 06:38     |                | 07:39   |                | 07:45    | 09:11-09:48/37 | 08:39    | 09:31-09:48/17 |                |
|                             | 21:57 | 21:00 | 07:18-07:50/32 |  | 19:40     |                | 18:20   |                | 16:09    |                | 15:35    | 10:10-10:33/23 |                |
| 14                          | 04:42 | 05:38 | 06:45-07:06/21 |  | 06:40     |                | 07:41   |                | 07:47    | 09:11-09:48/37 | 08:40    | 09:32-09:48/16 |                |
|                             | 21:56 | 20:57 | 07:17-07:52/35 |  | 19:38     |                | 18:18   |                | 16:07    |                | 15:35    | 10:10-10:33/23 |                |
| 15                          | 04:43 | 05:40 | 06:43-07:08/25 |  | 06:42     |                | 07:43   |                | 07:50    | 09:11-09:49/38 | 08:41    | 09:33-09:48/15 |                |
|                             | 21:54 | 20:55 | 07:16-07:53/37 |  | 19:35     |                | 18:15   |                | 16:05    |                | 15:35    | 10:10-10:34/24 |                |
| 16                          | 04:45 | 05:42 | 06:42-07:09/27 |  | 06:44     |                | 07:45   |                | 07:52    | 09:11-09:49/38 | 08:42    | 09:34-09:48/14 |                |
|                             | 21:53 | 20:52 | 07:15-07:54/39 |  | 19:32     |                | 18:12   |                | 16:04    |                | 15:35    | 10:11-10:34/23 |                |
| 17                          | 04:46 | 05:44 | 06:42-07:09/27 |  | 06:46     |                | 07:47   |                | 07:54    | 09:12-09:50/38 | 08:43    | 09:35-09:48/13 |                |
|                             | 21:52 | 20:50 | 07:14-07:55/41 |  | 19:29     |                | 18:10   |                | 16:02    |                | 15:35    | 10:11-10:35/24 |                |
| 18                          | 04:48 | 05:46 | 06:41-07:10/29 |  | 06:48     |                | 07:49   |                | 07:56    | 09:11-09:50/39 | 08:44    | 09:36-09:48/12 |                |
|                             | 21:50 | 20:48 | 07:13-07:55/42 |  | 19:27     |                | 18:07   |                | 16:00    |                | 15:35    | 10:12-10:36/24 |                |
| 19                          | 04:49 | 05:48 | 06:40-07:10/30 |  | 06:50     |                | 07:51   |                | 07:58    | 09:11-09:50/39 | 08:44    | 09:36-09:47/11 |                |
|                             | 21:49 | 20:45 | 07:12-07:56/44 |  | 19:24     |                | 18:05   |                | 15:59    |                | 15:35    | 10:12-10:37/25 |                |
| 20                          | 04:51 | 05:50 | 06:39-07:09/30 |  | 06:52     |                | 07:53   |                | 08:00    | 09:12-09:51/39 | 08:45    | 09:38-09:47/9  |                |
|                             | 21:47 | 20:43 | 07:11-07:56/45 |  | 19:21     |                | 18:02   |                | 15:57    |                | 15:36    | 10:12-10:36/24 |                |
| 21                          | 04:53 | 05:52 | 06:39-07:56/77 |  | 06:54     | 07:57-07:59/2  | 07:56   |                | 08:02    | 09:12-09:51/39 | 08:46    | 09:39-09:48/9  |                |
|                             | 21:46 | 20:40 |                |  | 19:19     |                | 18:00   |                | 15:55    |                | 15:36    | 10:13-10:37/24 |                |
| 22                          | 04:54 | 05:54 | 06:38-07:56/78 |  | 06:56     | 07:52-08:03/11 | 07:58   |                | 08:04    | 09:13-09:50/37 | 08:46    | 09:39-09:48/9  |                |
|                             | 21:44 | 20:38 |                |  | 19:16     |                | 17:57   |                | 15:54    |                | 15:37    | 10:13-10:37/24 |                |
| 23                          | 04:56 | 05:56 | 06:38-07:57/79 |  | 06:58     | 07:49-08:05/16 | 08:00   |                | 08:06    | 09:13-09:50/37 | 08:47    | 09:40-09:49/9  |                |
|                             | 21:43 | 20:35 |                |  | 19:13     |                | 17:55   |                | 15:52    |                | 15:37    | 10:14-10:38/24 |                |
| 24                          | 04:58 | 05:58 | 06:38-07:57/79 |  | 07:00     | 07:47-08:06/19 | 08:02   |                | 08:08    | 09:14-09:51/37 | 08:47    | 09:40-09:49/9  |                |
|                             | 21:41 | 20:33 |                |  | 19:11     |                | 17:53   |                | 15:51    |                | 15:38    | 10:14-10:38/24 |                |
| 25                          | 05:00 | 06:00 | 06:38-07:57/79 |  | 07:02     | 07:46-08:07/21 | 08:04   |                | 08:10    | 09:15-09:51/36 | 08:48    | 09:39-09:50/11 |                |
|                             | 21:39 | 20:30 |                |  | 19:08     |                | 17:50   |                | 15:50    |                | 15:38    | 10:14-10:39/25 |                |
| 26                          | 05:01 | 06:02 | 06:39-07:57/78 |  | 07:04     | 07:45-08:07/22 | 07:06   |                | 08:12    | 09:15-09:51/36 | 08:48    | 09:39-09:51/12 |                |
|                             | 21:37 | 20:28 |                |  | 19:05     |                | 16:48   |                | 15:48    |                | 15:39    | 10:15-10:39/24 |                |
| 27                          | 05:03 | 06:04 | 06:39-07:07/28 |  | 07:06     | 07:44-08:07/23 | 07:09   |                | 08:14    | 09:16-09:50/34 | 08:48    | 09:39-09:52/13 |                |
|                             | 21:36 | 20:25 | 07:08-07:56/48 |  | 19:02     |                | 16:45   |                | 15:47    |                | 15:40    | 10:16-10:40/24 |                |
| 28                          | 05:05 | 06:06 | 06:40-07:06/26 |  | 07:08     | 07:44-08:07/23 | 07:11   |                | 08:16    | 09:16-09:50/34 | 08:48    | 09:39-09:53/14 |                |
|                             | 21:34 | 20:23 | 07:08-07:56/48 |  | 19:00     |                | 16:43   |                | 15:46    |                | 15:41    | 10:16-10:39/23 |                |
| 29                          | 05:07 | 06:08 | 06:41-07:05/24 |  | 07:10     | 07:43-08:07/24 | 07:13   |                | 08:18    | 09:17-09:50/33 | 08:48    | 09:39-09:54/15 |                |
|                             | 21:32 | 20:20 | 07:07-07:55/48 |  | 18:57     |                | 16:41   |                | 15:45    |                | 15:42    | 10:16-10:40/24 |                |
| 30                          | 05:09 | 06:10 | 06:42-07:03/21 |  | 07:12     | 07:43-08:06/23 | 07:15   |                | 08:19    | 09:18-09:50/32 | 08:48    | 09:39-09:55/16 |                |
|                             | 21:30 | 20:17 | 07:07-07:54/47 |  | 18:54     |                | 16:38   |                | 15:44    |                | 15:43    | 10:17-10:40/23 |                |
| 31                          | 05:11 | 06:12 | 06:44-07:01/17 |  |           |                | 07:17   |                |          |                |          | 08:48          | 09:39-09:56/17 |
|                             | 21:28 | 20:15 | 07:07-07:54/47 |  |           |                | 16:36   |                |          |                |          | 15:44          | 10:18-10:41/23 |
| Potential sun hours         | 530   | 470   |                |  | 385       |                | 324     |                | 248      |                | 216      |                |                |
| Sum of minutes with flicker | 0     | 1465  |                |  | 580       |                | 66      |                | 962      |                | 1189     |                |                |

Table layout: For each day in each month the following matrix apply

|              |                  |                                 |                                |                      |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 20 - 04-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January                       | February                      | March                         | April          | May            | June           |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|----------------|----------------|
| 1                           | 08:48 09:41-10:05/24<br>15:45 | 08:13<br>16:42                | 07:09 07:56-08:27/31<br>17:44 | 06:47<br>19:50 | 05:30<br>20:52 | 04:33<br>21:50 |
| 2                           | 08:48 09:42-10:06/24<br>15:46 | 08:11<br>16:44                | 07:06 07:56-08:26/30<br>17:46 | 06:44<br>19:52 | 05:28<br>20:54 | 04:32<br>21:51 |
| 3                           | 08:48 09:42-10:06/24<br>15:48 | 08:09<br>16:46                | 07:04 07:56-08:25/29<br>17:49 | 06:41<br>19:54 | 05:26<br>20:56 | 04:31<br>21:52 |
| 4                           | 08:47 09:43-10:07/24<br>15:49 | 08:07<br>16:49                | 07:01 07:57-08:25/28<br>17:51 | 06:39<br>19:56 | 05:24<br>20:58 | 04:30<br>21:54 |
| 5                           | 08:47 09:43-10:07/24<br>15:50 | 08:05<br>16:51                | 06:59 07:57-08:23/26<br>17:53 | 06:36<br>19:58 | 05:21<br>21:00 | 04:29<br>21:55 |
| 6                           | 08:46 09:43-10:08/25<br>15:52 | 08:03<br>16:53                | 06:56 07:58-08:21/23<br>17:55 | 06:34<br>20:00 | 05:19<br>21:02 | 04:28<br>21:56 |
| 7                           | 08:46 09:44-10:08/24<br>15:53 | 08:01<br>16:55                | 06:53 07:59-08:20/21<br>17:57 | 06:31<br>20:02 | 05:17<br>21:05 | 04:28<br>21:57 |
| 8                           | 08:45 09:44-10:08/24<br>15:55 | 07:58<br>16:57                | 06:51 07:19-07:24/5<br>17:59  | 06:28<br>20:04 | 05:15<br>21:07 | 04:27<br>21:58 |
| 9                           | 08:44 09:45-10:08/23<br>15:56 | 07:56<br>17:00                | 06:48 07:16-07:26/10<br>18:01 | 06:26<br>20:06 | 05:13<br>21:09 | 04:26<br>21:59 |
| 10                          | 08:44 09:46-10:09/23<br>15:58 | 07:54<br>17:02                | 06:46 07:14-07:28/14<br>18:04 | 06:23<br>20:08 | 05:10<br>21:11 | 04:25<br>22:00 |
| 11                          | 08:43 09:46-10:09/23<br>16:00 | 07:52<br>17:04                | 06:43 07:11-07:28/17<br>18:06 | 06:20<br>20:11 | 05:08<br>21:13 | 04:25<br>22:01 |
| 12                          | 08:42 09:47-10:09/22<br>16:01 | 07:50<br>17:06                | 06:40 07:08-07:28/20<br>18:08 | 06:18<br>20:13 | 05:06<br>21:15 | 04:24<br>22:02 |
| 13                          | 08:41 09:48-10:09/21<br>16:03 | 07:47<br>17:09                | 06:38 07:06-07:29/23<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16 | 04:24<br>22:03 |
| 14                          | 08:40 09:48-10:09/21<br>16:05 | 07:45<br>17:11                | 06:35 07:05-07:29/24<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18 | 04:23<br>22:04 |
| 15                          | 08:39 09:50-10:09/19<br>16:07 | 07:43<br>17:13                | 06:32 07:04-07:28/24<br>18:14 | 06:10<br>20:19 | 05:00<br>21:20 | 04:23<br>22:05 |
| 16                          | 08:38 09:51-10:09/18<br>16:09 | 07:41<br>17:15                | 06:30 07:04-07:27/23<br>18:16 | 06:07<br>20:21 | 04:58<br>21:22 | 04:23<br>22:05 |
| 17                          | 08:36 09:52-10:08/16<br>16:10 | 07:38<br>17:18                | 06:27 07:05-07:27/22<br>18:18 | 06:05<br>20:23 | 04:57<br>21:24 | 04:23<br>22:06 |
| 18                          | 08:35 09:54-10:08/14<br>16:12 | 07:36 08:06-08:18/12<br>17:20 | 06:24 07:05-07:26/21<br>18:21 | 06:02<br>20:25 | 04:55<br>21:26 | 04:23<br>22:06 |
| 19                          | 08:34 09:55-10:06/11<br>16:14 | 07:34 08:04-08:21/17<br>17:22 | 06:22 07:05-07:25/20<br>18:23 | 06:00<br>20:27 | 04:53<br>21:28 | 04:22<br>22:07 |
| 20                          | 08:33 09:57-10:04/7<br>16:16  | 07:31 08:01-08:23/22<br>17:24 | 06:19 07:07-07:24/17<br>18:25 | 05:57<br>20:29 | 04:51<br>21:30 | 04:22<br>22:07 |
| 21                          | 08:31<br>16:18                | 07:29 08:00-08:23/23<br>17:27 | 06:16 07:08-07:21/13<br>18:27 | 05:55<br>20:31 | 04:49<br>21:32 | 04:23<br>22:07 |
| 22                          | 08:30<br>16:20                | 07:26 07:59-08:25/26<br>17:29 | 06:14 07:11-07:17/6<br>18:29  | 05:52<br>20:33 | 04:48<br>21:33 | 04:23<br>22:08 |
| 23                          | 08:28<br>16:22                | 07:24 07:58-08:25/27<br>17:31 | 06:11<br>18:31                | 05:50<br>20:36 | 04:46<br>21:35 | 04:23<br>22:08 |
| 24                          | 08:27<br>16:25                | 07:21 07:57-08:26/29<br>17:33 | 06:08<br>18:33                | 05:47<br>20:38 | 04:44<br>21:37 | 04:23<br>22:08 |
| 25                          | 08:25<br>16:27                | 07:19 07:56-08:26/30<br>17:35 | 06:06<br>18:35                | 05:45<br>20:40 | 04:43<br>21:39 | 04:24<br>22:08 |
| 26                          | 08:23<br>16:29                | 07:16 07:57-08:27/30<br>17:38 | 06:03<br>18:37                | 05:42<br>20:42 | 04:41<br>21:40 | 04:24<br>22:08 |
| 27                          | 08:22<br>16:31                | 07:14 07:56-08:27/31<br>17:40 | 06:00<br>18:39                | 05:40<br>20:44 | 04:40<br>21:42 | 04:25<br>22:08 |
| 28                          | 08:20<br>16:33                | 07:11 07:55-08:26/31<br>17:42 | 05:58<br>18:41                | 05:38<br>20:46 | 04:39<br>21:44 | 04:25<br>22:08 |
| 29                          | 08:18<br>16:35                |                               | 05:55<br>18:43                | 05:35<br>20:48 | 04:37<br>21:45 | 04:26<br>22:07 |
| 30                          | 08:16<br>16:37                |                               | 06:52<br>19:46                | 05:33<br>20:50 | 04:36<br>21:47 | 04:26<br>22:07 |
| 31                          | 08:14<br>16:40                |                               | 06:49<br>19:48                |                | 04:35<br>21:48 |                |
| Potential sun hours         | 235                           | 265                           | 365                           | 425            | 507            | 529            |
| Sum of minutes with flicker | 411                           | 278                           | 475                           | 0              | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 20 - 04-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | July  | August | September            | October              | November             | December             |
|-----------------------------|-------|--------|----------------------|----------------------|----------------------|----------------------|
| 1                           | 04:27 | 05:12  | 06:14                | 07:14 07:45-08:08/23 | 07:19                | 08:21 09:29-09:51/22 |
|                             | 22:07 | 21:26  | 20:12                | 18:52                | 16:34                | 15:43                |
| 2                           | 04:28 | 05:14  | 06:16                | 07:16 07:47-08:07/20 | 07:21                | 08:23 09:29-09:51/22 |
|                             | 22:06 | 21:24  | 20:09                | 18:49                | 16:32                | 15:42                |
| 3                           | 04:29 | 05:16  | 06:18                | 07:18 07:49-08:06/17 | 07:24                | 08:24 09:29-09:52/23 |
|                             | 22:06 | 21:22  | 20:07                | 18:46                | 16:29                | 15:41                |
| 4                           | 04:30 | 05:18  | 06:20                | 07:20 07:51-08:05/14 | 07:26                | 08:26 09:29-09:53/24 |
|                             | 22:05 | 21:20  | 20:04                | 18:44                | 16:27                | 15:40                |
| 5                           | 04:31 | 05:20  | 06:22                | 07:22 07:53-08:03/10 | 07:28                | 08:28 09:30-09:54/24 |
|                             | 22:04 | 21:17  | 20:02                | 18:41                | 16:25                | 15:39                |
| 6                           | 04:32 | 05:22  | 06:24                | 07:24 07:55-08:00/5  | 07:30                | 08:29 09:29-09:53/24 |
|                             | 22:04 | 21:15  | 19:59                | 18:38                | 16:23                | 15:38                |
| 7                           | 04:33 | 05:24  | 06:26                | 07:26 08:36-08:56/20 | 07:32                | 08:31 09:30-09:54/24 |
|                             | 22:03 | 21:13  | 19:56                | 18:36                | 16:21                | 15:38                |
| 8                           | 04:34 | 05:26  | 06:28                | 07:28 08:34-08:57/23 | 07:35                | 08:32 09:31-09:55/24 |
|                             | 22:02 | 21:11  | 19:54                | 18:33                | 16:19                | 15:37                |
| 9                           | 04:35 | 05:28  | 06:30                | 07:30 08:32-08:58/26 | 07:37                | 08:34 09:31-09:55/24 |
|                             | 22:01 | 21:09  | 19:51                | 18:31                | 16:17                | 15:37                |
| 10                          | 04:36 | 05:30  | 06:32                | 07:32 08:31-08:59/28 | 07:39                | 08:35 09:32-09:56/24 |
|                             | 22:00 | 21:06  | 19:48                | 18:28                | 16:15                | 15:36                |
| 11                          | 04:38 | 05:32  | 06:34                | 07:35 08:30-08:59/29 | 07:41                | 08:36 09:32-09:56/24 |
|                             | 21:59 | 21:04  | 19:46                | 18:25                | 16:13                | 15:36                |
| 12                          | 04:39 | 05:34  | 06:36                | 07:37 08:29-08:59/30 | 07:43                | 08:37 09:32-09:56/24 |
|                             | 21:58 | 21:02  | 19:43                | 18:23                | 16:11                | 15:36                |
| 13                          | 04:40 | 05:36  | 06:38                | 07:39 08:28-08:59/31 | 07:45                | 08:39 09:33-09:57/24 |
|                             | 21:57 | 21:00  | 19:40                | 18:20                | 16:09                | 15:35                |
| 14                          | 04:42 | 05:38  | 06:40                | 07:41 08:29-09:00/31 | 07:47                | 08:40 09:33-09:58/25 |
|                             | 21:56 | 20:57  | 19:37                | 18:18                | 16:07                | 15:35                |
| 15                          | 04:43 | 05:40  | 06:42                | 07:43 08:28-08:59/31 | 07:50                | 08:41 09:34-09:58/24 |
|                             | 21:54 | 20:55  | 19:35                | 18:15                | 16:05                | 15:35                |
| 16                          | 04:45 | 05:42  | 06:44                | 07:45 08:28-08:59/31 | 07:52                | 08:42 09:34-09:58/24 |
|                             | 21:53 | 20:52  | 19:32                | 18:12                | 16:04                | 15:35                |
| 17                          | 04:46 | 05:44  | 06:46                | 07:47 08:28-08:58/30 | 07:54                | 08:43 09:35-09:59/24 |
|                             | 21:52 | 20:50  | 19:29                | 18:10                | 16:02                | 15:35                |
| 18                          | 04:48 | 05:46  | 06:48                | 07:49 08:29-08:58/29 | 07:56                | 08:44 09:35-09:59/24 |
|                             | 21:50 | 20:48  | 19:27                | 18:07                | 16:00                | 15:35                |
| 19                          | 04:49 | 05:48  | 06:50                | 07:51 08:29-08:57/28 | 07:58                | 08:44 09:35-09:59/24 |
|                             | 21:49 | 20:45  | 19:24                | 18:05                | 15:59                | 15:35                |
| 20                          | 04:51 | 05:50  | 06:52                | 07:53 08:29-08:56/27 | 08:00                | 08:45 09:36-10:00/24 |
|                             | 21:47 | 20:43  | 19:21                | 18:02                | 15:57                | 15:36                |
| 21                          | 04:53 | 05:52  | 06:54                | 07:56 08:30-08:54/24 | 08:02                | 08:46 09:37-10:01/24 |
|                             | 21:46 | 20:40  | 19:19                | 18:00                | 15:55                | 15:36                |
| 22                          | 04:54 | 05:54  | 06:56 07:55-08:04/9  | 07:58 08:32-08:54/22 | 08:04                | 08:46 09:37-10:01/24 |
|                             | 21:44 | 20:38  | 19:16                | 17:57                | 15:54                | 15:37                |
| 23                          | 04:56 | 05:56  | 06:58 07:52-08:06/14 | 08:00 08:33-08:52/19 | 08:06 09:33-09:41/8  | 08:47 09:38-10:02/24 |
|                             | 21:42 | 20:35  | 19:13                | 17:55                | 15:52                | 15:37                |
| 24                          | 04:58 | 05:58  | 07:00 07:50-08:08/18 | 08:02 08:35-08:49/14 | 08:08 09:32-09:44/12 | 08:47 09:38-10:02/24 |
|                             | 21:41 | 20:33  | 19:10                | 17:53                | 15:51                | 15:38                |
| 25                          | 05:00 | 06:00  | 07:02 07:48-08:09/21 | 08:04 08:40-08:45/5  | 08:10 09:31-09:46/15 | 08:48 09:38-10:02/24 |
|                             | 21:39 | 20:30  | 19:08                | 17:50                | 15:50                | 15:38                |
| 26                          | 05:01 | 06:02  | 07:04 07:47-08:09/22 | 07:06                | 08:12 09:30-09:47/17 | 08:48 09:38-10:02/24 |
|                             | 21:37 | 20:28  | 19:05                | 16:48                | 15:48                | 15:39                |
| 27                          | 05:03 | 06:04  | 07:06 07:46-08:09/23 | 07:08                | 08:14 09:29-09:48/19 | 08:48 09:39-10:03/24 |
|                             | 21:35 | 20:25  | 19:02                | 16:45                | 15:47                | 15:40                |
| 28                          | 05:05 | 06:06  | 07:08 07:45-08:09/24 | 07:11                | 08:16 09:29-09:48/19 | 08:48 09:39-10:03/24 |
|                             | 21:34 | 20:22  | 19:00                | 16:43                | 15:46                | 15:41                |
| 29                          | 05:07 | 06:08  | 07:10 07:45-08:09/24 | 07:13                | 08:17 09:29-09:49/20 | 08:48 09:40-10:04/24 |
|                             | 21:32 | 20:20  | 18:57                | 16:41                | 15:45                | 15:42                |
| 30                          | 05:09 | 06:10  | 07:12 07:45-08:09/24 | 07:15                | 08:19 09:28-09:50/22 | 08:48 09:40-10:05/25 |
|                             | 21:30 | 20:17  | 18:54                | 16:38                | 15:44                | 15:43                |
| 31                          | 05:11 | 06:12  |                      | 07:17                |                      | 08:48 09:41-10:05/24 |
|                             | 21:28 | 20:15  |                      | 16:36                |                      | 15:44                |
| Potential sun hours         | 529   | 470    | 385                  | 324                  | 248                  | 216                  |
| Sum of minutes with flicker | 0     | 0      | 179                  | 594                  | 132                  | 741                  |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 21 - 06-A

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January        | February       | March          | April          | May                     | June           |
|-----------------------------|----------------|----------------|----------------|----------------|-------------------------|----------------|
| 1                           | 08:48<br>15:45 | 08:13<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50 | 07:14-07:20/6<br>20:52  | 05:30<br>21:49 |
| 2                           | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52 | 07:12-07:23/11<br>20:54 | 05:28<br>21:51 |
| 3                           | 08:47<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54 | 07:09-07:24/15<br>20:56 | 05:26<br>21:52 |
| 4                           | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56 | 07:06-07:24/18<br>20:58 | 05:24<br>21:54 |
| 5                           | 08:47<br>15:50 | 08:05<br>16:51 | 06:59<br>17:53 | 06:36<br>19:58 | 07:04-07:25/21<br>21:00 | 05:21<br>21:55 |
| 6                           | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00 | 07:01-07:25/24<br>21:02 | 05:19<br>21:56 |
| 7                           | 08:46<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02 | 07:01-07:25/24<br>21:04 | 05:17<br>21:57 |
| 8                           | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04 | 07:00-07:25/25<br>21:06 | 05:15<br>21:58 |
| 9                           | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06 | 07:00-07:24/24<br>21:08 | 05:13<br>21:59 |
| 10                          | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08 | 07:00-07:24/24<br>21:10 | 05:11<br>22:00 |
| 11                          | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10 | 07:00-07:22/22<br>21:12 | 05:08<br>22:01 |
| 12                          | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13 | 07:01-07:22/21<br>21:14 | 05:06<br>22:02 |
| 13                          | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15 | 07:01-07:20/19<br>21:16 | 05:04<br>22:03 |
| 14                          | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17 | 07:03-07:19/16<br>21:18 | 05:02<br>22:04 |
| 15                          | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19 | 07:04-07:16/12<br>21:20 | 05:00<br>22:04 |
| 16                          | 08:38<br>16:09 | 07:41<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21 | 07:08-07:12/4<br>21:22  | 05:58<br>22:05 |
| 17                          | 08:36<br>16:10 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23 | 05:30-05:44/14<br>21:24 | 05:56<br>22:06 |
| 18                          | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25 | 05:28-05:46/18<br>21:26 | 05:54<br>22:06 |
| 19                          | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27 | 05:27-05:47/20<br>21:28 | 05:53<br>22:07 |
| 20                          | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 05:57<br>20:29 | 05:25-05:48/23<br>21:30 | 05:51<br>22:07 |
| 21                          | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 05:55<br>20:31 | 05:24-05:49/25<br>21:31 | 05:50<br>22:07 |
| 22                          | 08:30<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 05:52<br>20:33 | 05:22-05:50/28<br>21:33 | 05:48<br>22:07 |
| 23                          | 08:28<br>16:22 | 07:24<br>17:31 | 06:11<br>18:31 | 05:50<br>20:35 | 05:22-05:51/29<br>21:35 | 05:47<br>22:08 |
| 24                          | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 05:47<br>20:38 | 05:21-05:51/30<br>21:37 | 05:46<br>22:08 |
| 25                          | 08:25<br>16:27 | 07:19<br>17:35 | 06:06<br>18:35 | 05:45<br>20:40 | 05:21-05:51/30<br>21:38 | 05:45<br>22:08 |
| 26                          | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 05:42<br>20:42 | 05:21-05:52/31<br>21:40 | 05:44<br>22:08 |
| 27                          | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 05:40<br>20:44 | 05:21-05:53/32<br>21:42 | 05:43<br>22:08 |
| 28                          | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 05:38<br>20:46 | 05:20-05:52/32<br>21:43 | 05:42<br>22:07 |
| 29                          | 08:18<br>16:35 |                | 05:55<br>18:43 | 05:35<br>20:48 | 05:20-05:53/33<br>21:45 | 05:41<br>22:07 |
| 30                          | 08:16<br>16:37 |                | 05:52<br>19:46 | 05:33<br>20:50 | 05:20-05:53/33<br>21:47 | 05:40<br>22:07 |
| 31                          | 08:14<br>16:40 |                | 06:49<br>19:48 |                | 05:20-05:54/34<br>21:48 |                |
| Potential sun hours         | 235            | 265            | 365            | 425            | 507                     | 528            |
| Sum of minutes with flicker | 0              | 0              | 0              | 286            | 422                     | 1024           |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst & Real case WTG: 21 - 06-A

Assumptions for shadow calculations

Reference year for calendar 2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July                          | August                        | September                     | October        | November       | December       |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|----------------|----------------|
| 1                           | 04:27 05:26-06:00/34<br>22:06 | 05:13<br>21:26                | 06:14 07:00-07:21/21<br>20:12 | 07:14<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                           | 04:28 05:26-06:00/34<br>22:06 | 05:14<br>21:24                | 06:16 06:59-07:22/23<br>20:09 | 07:16<br>18:49 | 07:21<br>16:32 | 08:23<br>15:42 |
| 3                           | 04:29 05:26-06:01/35<br>22:05 | 05:16<br>21:22                | 06:18 06:58-07:22/24<br>20:07 | 07:18<br>18:46 | 07:24<br>16:30 | 08:24<br>15:41 |
| 4                           | 04:30 05:27-06:01/34<br>22:05 | 05:18<br>21:20                | 06:20 06:58-07:22/24<br>20:04 | 07:20<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                           | 04:31 05:27-06:01/34<br>22:04 | 05:20<br>21:17                | 06:22 06:58-07:22/24<br>20:01 | 07:22<br>18:41 | 07:28<br>16:25 | 08:28<br>15:39 |
| 6                           | 04:32 05:27-06:02/35<br>22:03 | 05:22<br>21:15                | 06:24 06:58-07:21/23<br>19:59 | 07:24<br>18:38 | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                           | 04:33 05:27-06:02/35<br>22:03 | 05:24<br>21:13                | 06:26 06:58-07:21/23<br>19:56 | 07:26<br>18:36 | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                           | 04:34 05:27-06:02/35<br>22:02 | 05:26<br>21:11                | 06:28 07:00-07:20/20<br>19:54 | 07:28<br>18:33 | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                           | 04:35 05:28-06:02/34<br>22:01 | 05:28<br>21:09                | 06:30 07:01-07:18/17<br>19:51 | 07:30<br>18:31 | 07:37<br>16:17 | 08:33<br>15:37 |
| 10                          | 04:36 05:28-06:02/34<br>22:00 | 05:30<br>21:06                | 06:32 07:03-07:16/13<br>19:48 | 07:32<br>18:28 | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                          | 04:38 05:28-06:02/34<br>21:59 | 05:32<br>21:04                | 06:34 07:05-07:15/10<br>19:45 | 07:35<br>18:25 | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                          | 04:39 05:28-06:02/34<br>21:58 | 05:34<br>21:02                | 06:36 07:07-07:12/5<br>19:43  | 07:37<br>18:23 | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                          | 04:40 05:28-06:02/34<br>21:57 | 05:36<br>20:59                | 06:38<br>19:40                | 07:39<br>18:20 | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                          | 04:42 05:29-06:02/33<br>21:55 | 05:38<br>20:57                | 06:40<br>19:37                | 07:41<br>18:18 | 07:47<br>16:07 | 08:40<br>15:35 |
| 15                          | 04:43 05:29-06:02/33<br>21:54 | 05:40<br>20:55                | 06:42<br>19:35                | 07:43<br>18:15 | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                          | 04:45 05:29-06:01/32<br>21:53 | 05:42<br>20:52                | 06:44<br>19:32                | 07:45<br>18:12 | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                          | 04:46 05:30-06:02/32<br>21:52 | 05:44<br>20:50                | 06:46<br>19:29                | 07:47<br>18:10 | 07:54<br>16:02 | 08:43<br>15:35 |
| 18                          | 04:48 05:30-06:01/31<br>21:50 | 05:46<br>20:48                | 06:48<br>19:27                | 07:49<br>18:07 | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                          | 04:49 05:31-06:02/31<br>21:49 | 05:48<br>20:45                | 06:50<br>19:24                | 07:51<br>18:05 | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                          | 04:51 05:31-06:01/30<br>21:47 | 05:50<br>20:43                | 06:52<br>19:21                | 07:53<br>18:02 | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                          | 04:53 05:32-06:01/29<br>21:46 | 05:52<br>20:40                | 06:54<br>19:19                | 07:56<br>18:00 | 08:02<br>15:55 | 08:46<br>15:36 |
| 22                          | 04:54 05:32-06:00/28<br>21:44 | 05:54<br>20:38                | 06:56<br>19:16                | 07:58<br>17:57 | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                          | 04:56 05:34-06:00/26<br>21:42 | 05:56<br>20:35                | 06:58<br>19:13                | 08:00<br>17:55 | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                          | 04:58 05:35-05:58/23<br>21:41 | 05:58<br>20:33                | 07:00<br>19:10                | 08:02<br>17:53 | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                          | 05:00 05:37-05:58/21<br>21:39 | 06:00<br>20:30                | 07:02<br>19:08                | 08:04<br>17:50 | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                          | 05:01 05:39-05:57/18<br>21:37 | 06:02<br>20:28                | 07:04<br>19:05                | 07:06<br>16:48 | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                          | 05:03 05:40-05:55/15<br>21:35 | 06:04<br>20:25                | 07:06<br>19:02                | 07:08<br>16:45 | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                          | 05:05 05:42-05:53/11<br>21:33 | 06:06 07:08-07:16/8<br>20:22  | 07:08<br>19:00                | 07:11<br>16:43 | 08:16<br>15:46 | 08:48<br>15:41 |
| 29                          | 05:07 05:46-05:49/3<br>21:32  | 06:08 07:05-07:19/14<br>20:20 | 07:10<br>18:57                | 07:13<br>16:41 | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                          | 05:09<br>21:30                | 06:10 07:02-07:19/17<br>20:17 | 07:12<br>18:54                | 07:15<br>16:38 | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                          | 05:11<br>21:28                | 06:12 07:01-07:20/19<br>20:15 |                               | 07:17<br>16:36 |                | 08:48<br>15:44 |
| Potential sun hours         | 529                           | 470                           | 385                           | 324            | 248            | 216            |
| Sum of minutes with flicker | 842                           | 58                            | 227                           | 0              | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 22 - 31-C

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

|     |     |     |     |     |     |     |     |       |       |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | January                       | February                      | March                         | April          | May                          | June                          |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|------------------------------|-------------------------------|
| 1                           | 08:48<br>15:45                | 08:12 08:56-09:29/33<br>16:42 | 07:09<br>17:44                | 06:47<br>19:50 | 05:31<br>20:52               | 04:34 05:22-05:45/23<br>21:49 |
| 2                           | 08:48<br>15:46                | 08:11 08:56-09:29/33<br>16:44 | 07:06<br>17:46                | 06:44<br>19:52 | 05:28<br>20:54               | 04:32 05:22-05:45/23<br>21:51 |
| 3                           | 08:47<br>15:48                | 08:09 08:56-09:27/31<br>16:46 | 07:04<br>17:49                | 06:41<br>19:54 | 05:26<br>20:56               | 04:31 05:23-05:46/23<br>21:52 |
| 4                           | 08:47<br>15:49                | 08:07 08:57-09:27/30<br>16:49 | 07:01<br>17:51                | 06:39<br>19:56 | 05:24<br>20:58               | 04:30 05:23-05:45/22<br>21:53 |
| 5                           | 08:47<br>15:50                | 08:05 08:57-09:26/29<br>16:51 | 06:58<br>17:53                | 06:36<br>19:58 | 05:21<br>21:00               | 04:29 05:23-05:45/22<br>21:55 |
| 6                           | 08:46<br>15:52                | 08:03 08:58-09:25/27<br>16:53 | 06:56<br>17:55                | 06:34<br>20:00 | 05:19<br>21:02               | 04:29 05:23-05:45/22<br>21:56 |
| 7                           | 08:45<br>15:53                | 08:00 08:59-09:22/23<br>16:55 | 06:53<br>17:57                | 06:31<br>20:02 | 05:17<br>21:04               | 04:28 05:25-05:45/20<br>21:57 |
| 8                           | 08:45<br>15:55                | 07:58 09:00-09:18/18<br>16:58 | 06:51<br>17:59                | 06:28<br>20:04 | 05:15<br>21:06               | 04:27 05:25-05:45/20<br>21:58 |
| 9                           | 08:44<br>15:56                | 07:56 09:02-09:17/15<br>17:00 | 06:48<br>18:01                | 06:26<br>20:06 | 05:13<br>21:08               | 04:26 05:26-05:45/19<br>21:59 |
| 10                          | 08:43<br>15:58                | 07:54 09:04-09:14/10<br>17:02 | 06:45 07:14-07:24/10<br>18:04 | 06:23<br>20:08 | 05:11<br>21:10               | 04:26 05:26-05:45/19<br>22:00 |
| 11                          | 08:43<br>16:00                | 07:52<br>17:04                | 06:43 07:11-07:26/15<br>18:06 | 06:20<br>20:10 | 05:09<br>21:12               | 04:25 05:26-05:45/19<br>22:01 |
| 12                          | 08:42<br>16:01                | 07:50<br>17:07                | 06:40 07:08-07:28/20<br>18:08 | 06:18<br>20:13 | 05:06<br>21:14               | 04:24 05:26-05:44/18<br>22:02 |
| 13                          | 08:41<br>16:03                | 07:47<br>17:09                | 06:38 07:05-07:28/23<br>18:10 | 06:15<br>20:15 | 05:04<br>21:16               | 04:24 05:27-05:44/17<br>22:03 |
| 14                          | 08:40<br>16:05                | 07:45<br>17:11                | 06:35 07:04-07:30/26<br>18:12 | 06:13<br>20:17 | 05:02<br>21:18               | 04:24 05:28-05:45/17<br>22:04 |
| 15                          | 08:39<br>16:07                | 07:43<br>17:13                | 06:32 07:03-07:30/27<br>18:14 | 06:10<br>20:19 | 05:01 05:33-05:37/4<br>21:20 | 04:23 05:28-05:45/17<br>22:04 |
| 16                          | 08:37<br>16:09                | 07:40<br>17:15                | 06:30 07:02-07:30/28<br>18:16 | 06:07<br>20:21 | 05:32 05:40/8<br>21:22       | 04:23 05:28-05:44/16<br>22:05 |
| 17                          | 08:36 09:14-09:18/4<br>16:11  | 07:38<br>17:18                | 06:27 07:02-07:30/28<br>18:18 | 06:05<br>20:23 | 05:30 05:41/11<br>21:24      | 04:23 05:28-05:44/16<br>22:05 |
| 18                          | 08:35 09:12-09:20/8<br>16:12  | 07:36<br>17:20                | 06:24 07:01-07:30/29<br>18:20 | 06:02<br>20:25 | 05:28 05:41/13<br>21:26      | 04:23 05:29-05:44/15<br>22:06 |
| 19                          | 08:34 09:11-09:22/11<br>16:14 | 07:33<br>17:22                | 06:22 07:00-07:29/29<br>18:23 | 06:00<br>20:27 | 05:27 05:42/15<br>21:28      | 04:23 05:29-05:44/15<br>22:06 |
| 20                          | 08:32 09:09-09:23/14<br>16:16 | 07:31<br>17:24                | 06:19 07:01-07:29/28<br>18:25 | 05:57<br>20:29 | 05:25 05:43/18<br>21:30      | 04:23 05:29-05:44/15<br>22:07 |
| 21                          | 08:31 09:07-09:24/17<br>16:18 | 07:29<br>17:27                | 06:16 07:01-07:28/27<br>18:27 | 05:55<br>20:31 | 05:24 05:44/20<br>21:31      | 04:23 05:30-05:45/15<br>22:07 |
| 22                          | 08:29 09:06-09:25/19<br>16:20 | 07:26<br>17:29                | 06:14 07:01-07:27/26<br>18:29 | 05:52<br>20:33 | 05:22 05:43/21<br>21:33      | 04:23 05:30-05:45/15<br>22:07 |
| 23                          | 08:28 09:04-09:26/22<br>16:23 | 07:24<br>17:31                | 06:11 07:01-07:25/24<br>18:31 | 05:50<br>20:35 | 05:21 05:44/23<br>21:35      | 04:23 05:30-05:45/15<br>22:07 |
| 24                          | 08:26 09:02-09:27/25<br>16:25 | 07:21<br>17:33                | 06:08 07:03-07:24/21<br>18:33 | 05:47<br>20:38 | 05:21 05:45/24<br>21:37      | 04:23 05:30-05:45/15<br>22:08 |
| 25                          | 08:25 09:00-09:27/27<br>16:27 | 07:19<br>17:35                | 06:06 07:04-07:22/18<br>18:35 | 05:45<br>20:40 | 05:21 05:44/23<br>21:38      | 04:24 05:31-05:46/15<br>22:08 |
| 26                          | 08:23 08:58-09:28/30<br>16:29 | 07:16<br>17:38                | 06:03 07:05-07:18/13<br>18:37 | 05:42<br>20:42 | 05:21 05:45/24<br>21:40      | 04:24 05:30-05:46/16<br>22:08 |
| 27                          | 08:21 08:56-09:28/32<br>16:31 | 07:14<br>17:40                | 06:00<br>18:39                | 05:40<br>20:44 | 05:21 05:45/24<br>21:42      | 04:25 05:31-05:47/16<br>22:07 |
| 28                          | 08:20 08:56-09:28/32<br>16:33 | 07:11<br>17:42                | 05:58<br>18:41                | 05:38<br>20:46 | 05:21 05:45/24<br>21:43      | 04:25 05:30-05:47/17<br>22:07 |
| 29                          | 08:18 08:56-09:28/32<br>16:35 |                               | 05:55<br>18:43                | 05:35<br>20:48 | 05:21 05:45/24<br>21:45      | 04:26 05:31-05:48/17<br>22:07 |
| 30                          | 08:16 08:56-09:29/33<br>16:38 |                               | 06:52<br>19:46                | 05:33<br>20:50 | 05:21 05:45/24<br>21:46      | 04:27 05:31-05:48/17<br>22:07 |
| 31                          | 08:14 08:56-09:29/33<br>16:40 |                               | 06:49<br>19:48                |                | 05:21 05:45/24<br>21:48      |                               |
| Potential sun hours         | 235                           | 265                           | 365                           | 425            | 507                          | 528                           |
| Sum of minutes with flicker | 339                           | 249                           | 392                           | 0              | 324                          | 536                           |

Table layout: For each day in each month the following matrix apply

|              |                  |                                                                                     |
|--------------|------------------|-------------------------------------------------------------------------------------|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 22 - 31-C

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July                 | August | September            | October              | November             | December |
|-----------------------------|----------------------|--------|----------------------|----------------------|----------------------|----------|
| 1                           | 04:27 05:30-05:48/18 | 05:13  | 06:14                | 07:14 07:45-08:08/23 | 07:19 08:35-08:42/7  | 08:21    |
|                             | 22:06                | 21:26  | 20:12                | 18:52                | 16:34                | 15:43    |
| 2                           | 04:28 05:30-05:49/19 | 05:15  | 06:16                | 07:16 07:47-08:07/20 | 07:21 08:32-08:45/13 | 08:23    |
|                             | 22:06                | 21:24  | 20:09                | 18:49                | 16:32                | 15:42    |
| 3                           | 04:29 05:30-05:50/20 | 05:16  | 06:18                | 07:18 07:49-08:04/15 | 07:24 08:31-08:47/16 | 08:24    |
|                             | 22:05                | 21:22  | 20:07                | 18:46                | 16:30                | 15:41    |
| 4                           | 04:30 05:31-05:50/19 | 05:18  | 06:20                | 07:20 07:51-08:02/11 | 07:26 08:29-08:51/22 | 08:26    |
|                             | 22:05                | 21:19  | 20:04                | 18:44                | 16:27                | 15:40    |
| 5                           | 04:31 05:31-05:51/20 | 05:20  | 06:22                | 07:22                | 07:28 08:29-08:54/25 | 08:27    |
|                             | 22:04                | 21:17  | 20:01                | 18:41                | 16:25                | 15:39    |
| 6                           | 04:32 05:31-05:51/20 | 05:22  | 06:24                | 07:24                | 07:30 08:28-08:56/28 | 08:29    |
|                             | 22:03                | 21:15  | 19:59                | 18:38                | 16:23                | 15:39    |
| 7                           | 04:33 05:30-05:52/22 | 05:24  | 06:26                | 07:26                | 07:32 08:27-08:56/29 | 08:30    |
|                             | 22:03                | 21:13  | 19:56                | 18:36                | 16:21                | 15:38    |
| 8                           | 04:34 05:30-05:52/22 | 05:26  | 06:28                | 07:28                | 07:34 08:27-08:58/31 | 08:32    |
|                             | 22:02                | 21:11  | 19:53                | 18:33                | 16:19                | 15:37    |
| 9                           | 04:35 05:30-05:52/22 | 05:28  | 06:30                | 07:30                | 07:37 08:27-08:58/31 | 08:33    |
|                             | 22:01                | 21:09  | 19:51                | 18:31                | 16:17                | 15:37    |
| 10                          | 04:37 05:30-05:53/23 | 05:30  | 06:32                | 07:32                | 07:39 08:27-09:00/33 | 08:35    |
|                             | 22:00                | 21:06  | 19:48                | 18:28                | 16:15                | 15:36    |
| 11                          | 04:38 05:30-05:53/23 | 05:32  | 06:34                | 07:34                | 07:41 08:27-09:00/33 | 08:36    |
|                             | 21:59                | 21:04  | 19:45                | 18:25                | 16:13                | 15:36    |
| 12                          | 04:39 05:30-05:53/23 | 05:34  | 06:36                | 07:37                | 07:43 08:27-09:00/33 | 08:37    |
|                             | 21:58                | 21:02  | 19:43                | 18:23                | 16:11                | 15:36    |
| 13                          | 04:40 05:30-05:54/24 | 05:36  | 06:38                | 07:39                | 07:45 08:28-09:01/33 | 08:38    |
|                             | 21:57                | 20:59  | 19:40                | 18:20                | 16:09                | 15:35    |
| 14                          | 04:42 05:30-05:54/24 | 05:38  | 06:40                | 07:41                | 07:47 08:28-09:00/32 | 08:39    |
|                             | 21:55                | 20:57  | 19:37                | 18:18                | 16:07                | 15:35    |
| 15                          | 04:43 05:30-05:54/24 | 05:40  | 06:42                | 07:43                | 07:49 08:29-09:01/32 | 08:41    |
|                             | 21:54                | 20:55  | 19:35                | 18:15                | 16:05                | 15:35    |
| 16                          | 04:45 05:30-05:55/25 | 05:42  | 06:44                | 07:45                | 07:52 08:30-09:01/31 | 08:41    |
|                             | 21:53                | 20:52  | 19:32                | 18:12                | 16:04                | 15:35    |
| 17                          | 04:46 05:30-05:54/24 | 05:44  | 06:46 07:58-08:03/5  | 07:47                | 07:54 08:32-09:00/28 | 08:42    |
|                             | 21:51                | 20:50  | 19:29                | 18:10                | 16:02                | 15:35    |
| 18                          | 04:48 05:30-05:54/24 | 05:46  | 06:48 07:53-08:07/14 | 07:49                | 07:56 08:35-09:01/26 | 08:43    |
|                             | 21:50                | 20:47  | 19:27                | 18:07                | 16:00                | 15:35    |
| 19                          | 04:50 05:31-05:54/23 | 05:48  | 06:50 07:51-08:10/19 | 07:51                | 07:58 08:37-09:00/23 | 08:44    |
|                             | 21:49                | 20:45  | 19:24                | 18:05                | 15:59                | 15:36    |
| 20                          | 04:51 05:30-05:54/24 | 05:50  | 06:52 07:49-08:11/22 | 07:53                | 08:00 08:39-09:00/21 | 08:45    |
|                             | 21:47                | 20:43  | 19:21                | 18:02                | 15:57                | 15:36    |
| 21                          | 04:53 05:31-05:54/23 | 05:52  | 06:54 07:48-08:12/24 | 07:55                | 08:02 08:42-09:00/18 | 08:45    |
|                             | 21:46                | 20:40  | 19:19                | 18:00                | 15:55                | 15:36    |
| 22                          | 04:54 05:32-05:54/22 | 05:54  | 06:56 07:46-08:12/26 | 07:58                | 08:04 08:44-08:59/15 | 08:46    |
|                             | 21:44                | 20:38  | 19:16                | 17:58                | 15:54                | 15:37    |
| 23                          | 04:56 05:34-05:54/20 | 05:56  | 06:58 07:45-08:13/28 | 08:00                | 08:06 08:46-08:59/13 | 08:47    |
|                             | 21:42                | 20:35  | 19:13                | 17:55                | 15:53                | 15:37    |
| 24                          | 04:58 05:35-05:53/18 | 05:58  | 07:00 07:45-08:13/28 | 08:02                | 08:08 08:48-08:58/10 | 08:47    |
|                             | 21:41                | 20:33  | 19:10                | 17:53                | 15:51                | 15:38    |
| 25                          | 05:00 05:37-05:53/16 | 06:00  | 07:02 07:44-08:13/29 | 08:04                | 08:10 08:51-08:57/6  | 08:47    |
|                             | 21:39                | 20:30  | 19:08                | 17:50                | 15:50                | 15:38    |
| 26                          | 05:01 05:39-05:52/13 | 06:02  | 07:04 07:44-08:13/29 | 07:06                | 08:12 08:53-08:56/3  | 08:48    |
|                             | 21:37                | 20:28  | 19:05                | 16:48                | 15:48                | 15:39    |
| 27                          | 05:03 05:40-05:51/11 | 06:04  | 07:06 07:44-08:12/28 | 07:08                | 08:14                | 08:48    |
|                             | 21:35                | 20:25  | 19:02                | 16:45                | 15:47                | 15:40    |
| 28                          | 05:05 05:42-05:50/8  | 06:06  | 07:08 07:43-08:11/28 | 07:11                | 08:15                | 08:48    |
|                             | 21:33                | 20:22  | 19:00                | 16:43                | 15:46                | 15:41    |
| 29                          | 05:07 05:44-05:49/5  | 06:08  | 07:10 07:44-08:11/27 | 07:13                | 08:17                | 08:48    |
|                             | 21:32                | 20:20  | 18:57                | 16:41                | 15:45                | 15:42    |
| 30                          | 05:09 05:45-05:46/1  | 06:10  | 07:12 07:44-08:10/26 | 07:15                | 08:19                | 08:48    |
|                             | 21:30                | 20:17  | 18:54                | 16:39                | 15:44                | 15:43    |
| 31                          | 05:11                | 06:12  |                      | 07:17                |                      | 08:48    |
|                             | 21:28                | 20:15  |                      | 16:36                |                      | 15:44    |
| Potential sun hours         | 529                  | 470    | 385                  | 324                  | 248                  | 217      |
| Sum of minutes with flicker | 580                  | 0      | 333                  | 69                   | 592                  | 0        |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|--------------|------------------|-------------------------------------------------------------------------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |



Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 23 - 32-C

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January                       | February                      | March                         | April                         | May                           | June           |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|
| 1                           | 08:48<br>15:45                | 08:12 08:58-09:44/46<br>16:42 | 07:09<br>17:44                | 06:47 07:21-07:41/20<br>19:50 | 05:31 06:54-07:23/29<br>20:52 | 04:34<br>21:49 |
| 2                           | 08:48<br>15:46                | 08:11 08:57-09:44/47<br>16:44 | 07:06<br>17:46                | 06:44 07:22-07:41/19<br>19:52 | 05:28 06:56-07:22/26<br>20:54 | 04:32<br>21:51 |
| 3                           | 08:47<br>15:48                | 08:09 08:56-09:44/48<br>16:46 | 07:04<br>17:49                | 06:42 07:22-07:40/18<br>19:54 | 05:26 06:57-07:19/22<br>20:56 | 04:31<br>21:52 |
| 4                           | 08:47<br>15:49                | 08:07 08:55-09:45/50<br>16:49 | 07:01<br>17:51                | 06:39 07:22-07:38/16<br>19:56 | 05:24 06:59-07:17/18<br>20:58 | 04:30<br>21:53 |
| 5                           | 08:47<br>15:50                | 08:05 08:55-09:45/50<br>16:51 | 06:59<br>17:53                | 06:36 07:24-07:36/12<br>19:58 | 05:21 07:02-07:14/12<br>21:00 | 04:29<br>21:55 |
| 6                           | 08:46<br>15:52                | 08:03 08:55-09:45/50<br>16:53 | 06:56<br>17:55                | 06:34 07:27-07:32/5<br>20:00  | 05:19<br>21:02                | 04:29<br>21:56 |
| 7                           | 08:46<br>15:53                | 08:00 08:54-09:45/51<br>16:55 | 06:53<br>17:57                | 06:31 07:08-07:23/15<br>20:02 | 05:17<br>21:04                | 04:28<br>21:57 |
| 8                           | 08:45<br>15:55                | 07:58 08:54-09:45/51<br>16:58 | 06:51<br>17:59                | 06:28 07:04-07:25/21<br>20:04 | 05:15<br>21:06                | 04:27<br>21:58 |
| 9                           | 08:44<br>15:56                | 07:56 08:55-09:45/50<br>17:00 | 06:48<br>18:01                | 06:26 07:01-07:26/25<br>20:06 | 05:13<br>21:08                | 04:26<br>21:59 |
| 10                          | 08:43<br>15:58                | 07:54 08:54-09:44/50<br>17:02 | 06:45<br>18:04                | 06:23 06:59-07:28/29<br>20:08 | 05:11<br>21:10                | 04:26<br>22:00 |
| 11                          | 08:43<br>16:00                | 07:52 08:55-09:44/49<br>17:04 | 06:43<br>18:06                | 06:20 06:57-07:29/32<br>20:10 | 05:09<br>21:12                | 04:25<br>22:01 |
| 12                          | 08:42<br>16:01                | 07:50 08:55-09:44/49<br>17:07 | 06:40<br>18:08                | 06:18 06:56-07:30/34<br>20:13 | 05:06<br>21:14                | 04:24<br>22:02 |
| 13                          | 08:41<br>16:03                | 07:47 08:55-09:42/47<br>17:09 | 06:38<br>18:10                | 06:15 06:54-07:31/37<br>20:15 | 05:04<br>21:16                | 04:24<br>22:03 |
| 14                          | 08:40<br>16:05                | 07:45 08:56-09:42/46<br>17:11 | 06:35<br>18:12                | 06:13 06:54-07:32/38<br>20:17 | 05:02<br>21:18                | 04:24<br>22:04 |
| 15                          | 08:39<br>16:07                | 07:43 08:56-09:40/44<br>17:13 | 06:32<br>18:14                | 06:10 06:52-07:31/39<br>20:19 | 05:01<br>21:20                | 04:23<br>22:04 |
| 16                          | 08:37<br>16:09                | 07:41 08:57-09:39/42<br>17:16 | 06:30<br>18:16                | 06:07 06:52-07:32/40<br>20:21 | 04:59<br>21:22                | 04:23<br>22:05 |
| 17                          | 08:36 09:14-09:17/3<br>16:11  | 07:38 08:57-09:37/40<br>17:18 | 06:27<br>18:18                | 06:05 06:51-07:32/41<br>20:23 | 04:57<br>21:24                | 04:23<br>22:06 |
| 18                          | 08:35 09:12-09:19/7<br>16:12  | 07:36 08:58-09:35/37<br>17:20 | 06:24<br>18:21                | 06:02 06:51-07:32/41<br>20:25 | 04:55<br>21:26                | 04:23<br>22:06 |
| 19                          | 08:34 09:11-09:21/10<br>16:14 | 07:33 08:59-09:30/31<br>17:22 | 06:22<br>18:23                | 06:00 06:50-07:32/42<br>20:27 | 04:53<br>21:28                | 04:23<br>22:06 |
| 20                          | 08:32 09:09-09:28/19<br>16:16 | 07:31 09:01-09:26/25<br>17:24 | 06:19<br>18:25                | 05:57 06:50-07:32/42<br>20:29 | 04:51<br>21:30                | 04:23<br>22:07 |
| 21                          | 08:31 09:07-09:31/24<br>16:18 | 07:29 09:02-09:24/22<br>17:27 | 06:16<br>18:27                | 05:55 06:50-07:32/42<br>20:31 | 04:50<br>21:31                | 04:23<br>22:07 |
| 22                          | 08:30 09:06-09:33/27<br>16:20 | 07:26 09:05-09:21/16<br>17:29 | 06:14<br>18:29                | 05:52 06:50-07:31/41<br>20:33 | 04:48<br>21:33                | 04:23<br>22:07 |
| 23                          | 08:28 09:04-09:35/31<br>16:23 | 07:24 09:09-09:16/7<br>17:31  | 06:11<br>18:31                | 05:50 06:50-07:31/41<br>20:35 | 04:46<br>21:35                | 04:23<br>22:08 |
| 24                          | 08:26 09:03-09:36/33<br>16:25 | 07:21<br>17:33                | 06:08 06:36-06:39/3<br>18:33  | 05:47 06:49-07:29/40<br>20:38 | 04:45<br>21:37                | 04:23<br>22:08 |
| 25                          | 08:25 09:03-09:37/34<br>16:27 | 07:19<br>17:35                | 06:06 06:33-06:40/7<br>18:35  | 05:45 06:50-07:29/39<br>20:40 | 04:43<br>21:38                | 04:24<br>22:08 |
| 26                          | 08:23 09:03-09:39/36<br>16:29 | 07:16<br>17:38                | 06:03 06:30-06:41/11<br>18:37 | 05:42 06:51-07:29/38<br>20:42 | 04:42<br>21:40                | 04:24<br>22:08 |
| 27                          | 08:22 09:03-09:40/37<br>16:31 | 07:14<br>17:40                | 06:00 06:28-06:43/15<br>18:39 | 05:40 06:51-07:28/37<br>20:44 | 04:40<br>21:42                | 04:25<br>22:07 |
| 28                          | 08:20 09:01-09:41/40<br>16:33 | 07:11<br>17:42                | 05:58 06:25-06:43/18<br>18:41 | 05:38 06:51-07:26/35<br>20:46 | 04:39<br>21:43                | 04:25<br>22:07 |
| 29                          | 08:18 09:00-09:41/41<br>16:35 |                               | 05:55 06:22-06:43/21<br>18:43 | 05:35 06:52-07:26/34<br>20:48 | 04:37<br>21:45                | 04:26<br>22:07 |
| 30                          | 08:16 08:59-09:42/43<br>16:38 |                               | 06:52 07:22-07:43/21<br>19:46 | 05:33 06:53-07:24/31<br>20:50 | 04:36<br>21:46                | 04:27<br>22:07 |
| 31                          | 08:14 08:58-09:43/45<br>16:40 |                               | 06:50 07:21-07:42/21<br>19:48 |                               | 04:35<br>21:48                |                |
| Potential sun hours         | 235                           | 265                           | 365                           | 425                           | 507                           | 528            |
| Sum of minutes with flicker | 430                           | 948                           | 117                           | 944                           | 107                           | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 23 - 32-C

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

|                             | July           | August         | September               | October                 | November                | December                |
|-----------------------------|----------------|----------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 1                           | 04:27<br>22:06 | 05:13<br>21:26 | 06:14<br>20:12          | 06:56-07:29/33<br>18:52 | 07:19<br>16:34          | 08:24-09:14/50<br>15:43 |
| 2                           | 04:28<br>22:06 | 05:15<br>21:24 | 06:16<br>20:09          | 06:57-07:27/30<br>18:49 | 07:21<br>16:32          | 08:24-09:14/50<br>15:42 |
| 3                           | 04:29<br>22:05 | 05:16<br>21:22 | 06:18<br>20:07          | 06:58-07:26/28<br>18:46 | 07:24<br>16:30          | 08:24-09:15/51<br>15:41 |
| 4                           | 04:30<br>22:05 | 05:18<br>21:19 | 06:20<br>20:04          | 07:00-07:24/24<br>18:44 | 07:26<br>16:27          | 08:24-09:15/51<br>15:40 |
| 5                           | 04:31<br>22:04 | 05:20<br>21:17 | 06:22<br>20:01          | 07:02-07:21/19<br>18:41 | 07:28<br>16:25          | 08:25-09:15/50<br>15:39 |
| 6                           | 04:32<br>22:03 | 05:22<br>21:15 | 06:24<br>19:59          | 07:06-07:17/11<br>18:38 | 07:30<br>16:23          | 08:25-09:15/50<br>15:39 |
| 7                           | 04:33<br>22:03 | 05:24<br>21:13 | 06:26<br>19:56          | 07:22-07:30/8<br>18:36  | 07:32<br>16:21          | 08:25-09:15/50<br>15:38 |
| 8                           | 04:34<br>22:02 | 05:26<br>21:11 | 06:28<br>19:54          | 07:19-07:32/13<br>18:33 | 07:34<br>16:19          | 08:26-09:15/49<br>15:37 |
| 9                           | 04:35<br>22:01 | 05:28<br>21:09 | 06:30<br>19:51          | 07:17-07:33/16<br>18:31 | 07:37<br>16:17          | 08:27-09:15/48<br>15:37 |
| 10                          | 04:37<br>22:00 | 05:30<br>21:06 | 06:32<br>19:48          | 07:15-07:33/18<br>18:28 | 07:39<br>16:15          | 08:28-09:15/47<br>15:36 |
| 11                          | 04:38<br>21:59 | 05:32<br>21:04 | 06:34<br>19:46          | 07:14-07:34/20<br>18:25 | 07:41<br>16:13          | 08:29-09:14/45<br>15:36 |
| 12                          | 04:39<br>21:58 | 05:34<br>21:02 | 06:36<br>19:43          | 07:13-07:34/21<br>18:23 | 07:43<br>16:11          | 08:30-09:14/44<br>15:36 |
| 13                          | 04:40<br>21:57 | 05:36<br>20:59 | 06:38<br>19:40          | 07:12-07:34/22<br>18:20 | 07:45<br>16:09          | 08:32-09:14/42<br>15:35 |
| 14                          | 04:42<br>21:55 | 05:38<br>20:57 | 06:40<br>19:37          | 07:12-07:33/21<br>18:18 | 07:47<br>16:07          | 08:33-09:13/40<br>15:35 |
| 15                          | 04:43<br>21:54 | 05:40<br>20:55 | 06:42<br>19:35          | 07:13-07:33/20<br>18:15 | 07:49<br>16:06          | 08:35-09:13/38<br>15:35 |
| 16                          | 04:45<br>21:53 | 05:42<br>20:52 | 06:44<br>19:32          | 07:15-07:32/17<br>18:12 | 07:52<br>16:04          | 08:36-09:12/36<br>15:35 |
| 17                          | 04:46<br>21:51 | 05:44<br>20:50 | 06:46<br>19:29          | 07:17-07:31/14<br>18:10 | 07:54<br>16:02          | 08:36-09:11/35<br>15:35 |
| 18                          | 04:48<br>21:50 | 05:46<br>20:48 | 06:48<br>19:27          | 07:19-07:30/11<br>18:07 | 07:56<br>16:00          | 08:37-09:11/34<br>15:35 |
| 19                          | 04:50<br>21:49 | 05:48<br>20:45 | 06:50<br>19:24          | 07:21-07:28/7<br>18:05  | 07:58<br>15:59          | 08:37-09:10/33<br>15:36 |
| 20                          | 04:51<br>21:47 | 05:50<br>20:43 | 06:52<br>19:21          | 07:23-07:24/1<br>18:02  | 08:00<br>15:57          | 08:39-09:08/29<br>15:36 |
| 21                          | 04:53<br>21:46 | 05:52<br>20:40 | 06:54<br>19:19          | 07:56<br>18:00          | 09:33-09:54/21<br>15:55 | 08:42-09:08/26<br>15:36 |
| 22                          | 04:54<br>21:44 | 05:54<br>20:38 | 06:56<br>19:16          | 07:58<br>17:58          | 09:32-09:56/24<br>15:54 | 08:44-09:06/22<br>15:37 |
| 23                          | 04:56<br>21:42 | 05:56<br>20:35 | 06:58<br>19:13          | 08:00<br>17:55          | 09:30-09:59/29<br>15:53 | 08:46-09:03/17<br>15:37 |
| 24                          | 04:58<br>21:41 | 05:58<br>20:33 | 07:00<br>19:10          | 08:02<br>17:53          | 09:28-10:03/35<br>15:51 | 08:48-08:56/8<br>15:38  |
| 25                          | 05:00<br>21:39 | 06:00<br>20:30 | 07:02<br>19:08          | 08:04<br>17:50          | 09:27-10:06/39<br>15:50 | 08:51-08:56/5<br>15:38  |
| 26                          | 05:01<br>21:37 | 06:02<br>20:28 | 07:04<br>19:05          | 07:06<br>16:48          | 08:27-09:08/41<br>15:48 | 08:53-08:55/2<br>15:39  |
| 27                          | 05:03<br>21:35 | 06:04<br>20:25 | 07:06<br>19:02          | 07:08<br>16:46          | 08:26-09:09/43<br>15:47 | 08:48<br>15:40          |
| 28                          | 05:05<br>21:33 | 06:06<br>20:22 | 07:08<br>19:00          | 07:11<br>16:43          | 08:26-09:11/45<br>15:46 | 08:48<br>15:41          |
| 29                          | 05:07<br>21:32 | 06:08<br>20:20 | 07:10<br>18:57          | 07:13<br>16:41          | 08:25-09:12/47<br>15:45 | 08:48<br>15:42          |
| 30                          | 05:09<br>21:30 | 06:10<br>20:17 | 07:12<br>18:54          | 07:15<br>16:39          | 08:24-09:12/48<br>15:44 | 08:48<br>15:43          |
| 31                          | 05:11<br>21:28 | 06:12<br>20:15 | 06:55-07:30/35<br>16:36 | 07:17<br>15:44          | 08:25-09:14/49<br>15:44 | 08:48<br>15:44          |
| Potential sun hours         | 529            | 470            | 385                     | 324                     | 248                     | 217                     |
| Sum of minutes with flicker | 0              | 831            | 354                     | 438                     | 952                     | 0                       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

Project:

2026-02-Ecosoul-ME ŽARES-UIPE

Licensed user:

Skepast &amp; Puhkim OÜ

Laki põik 2

EE-12919 Tallinn

+37253462494

Mihkel Lindpere / mihkel.lindpere@skpk.ee

Calculated:

12.06.2026 21:08/4.1.287

SKEPAST &amp; PUHKIM

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 24 - 33-C

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed 3,0m/s

|                             | January        | February       | March          | April                   | May            | June                    |
|-----------------------------|----------------|----------------|----------------|-------------------------|----------------|-------------------------|
| 1                           | 08:48<br>15:45 | 08:12<br>16:42 | 07:09<br>17:44 | 06:47<br>19:50          | 05:31<br>20:52 | 06:02-06:25/23<br>21:49 |
| 2                           | 08:48<br>15:46 | 08:11<br>16:44 | 07:06<br>17:46 | 06:44<br>19:52          | 05:28<br>20:54 | 06:01-06:25/24<br>21:51 |
| 3                           | 08:47<br>15:48 | 08:09<br>16:46 | 07:04<br>17:49 | 06:41<br>19:54          | 05:26<br>20:56 | 06:00-06:24/24<br>21:52 |
| 4                           | 08:47<br>15:49 | 08:07<br>16:49 | 07:01<br>17:51 | 06:39<br>19:56          | 05:24<br>20:58 | 06:00-06:25/25<br>21:53 |
| 5                           | 08:47<br>15:50 | 08:05<br>16:51 | 06:58<br>17:53 | 06:36<br>19:58          | 05:21<br>21:00 | 06:00-06:24/24<br>21:55 |
| 6                           | 08:46<br>15:52 | 08:03<br>16:53 | 06:56<br>17:55 | 06:33<br>20:00          | 05:19<br>21:02 | 06:00-06:24/24<br>21:56 |
| 7                           | 08:46<br>15:53 | 08:00<br>16:55 | 06:53<br>17:57 | 06:31<br>20:02          | 05:17<br>21:04 | 06:00-06:24/24<br>21:57 |
| 8                           | 08:45<br>15:55 | 07:58<br>16:58 | 06:51<br>17:59 | 06:28<br>20:04          | 05:15<br>21:06 | 06:01-06:23/22<br>21:58 |
| 9                           | 08:44<br>15:56 | 07:56<br>17:00 | 06:48<br>18:01 | 06:26<br>20:06          | 05:13<br>21:08 | 06:01-06:23/22<br>21:59 |
| 10                          | 08:43<br>15:58 | 07:54<br>17:02 | 06:45<br>18:04 | 06:23<br>20:08          | 05:11<br>21:10 | 06:02-06:22/20<br>22:00 |
| 11                          | 08:43<br>16:00 | 07:52<br>17:04 | 06:43<br>18:06 | 06:20<br>20:10          | 05:08<br>21:12 | 06:03-06:22/19<br>22:01 |
| 12                          | 08:42<br>16:01 | 07:50<br>17:06 | 06:40<br>18:08 | 06:18<br>20:13          | 05:06<br>21:14 | 06:04-06:20/16<br>22:02 |
| 13                          | 08:41<br>16:03 | 07:47<br>17:09 | 06:38<br>18:10 | 06:15<br>20:15          | 05:04<br>21:16 | 06:05-06:19/14<br>22:03 |
| 14                          | 08:40<br>16:05 | 07:45<br>17:11 | 06:35<br>18:12 | 06:13<br>20:17          | 05:02<br>21:18 | 06:07-06:16/9<br>22:04  |
| 15                          | 08:39<br>16:07 | 07:43<br>17:13 | 06:32<br>18:14 | 06:10<br>20:19          | 05:00<br>21:20 | 22:04                   |
| 16                          | 08:37<br>16:09 | 07:40<br>17:15 | 06:30<br>18:16 | 06:07<br>20:21          | 04:59<br>21:22 | 22:05                   |
| 17                          | 08:36<br>16:10 | 07:38<br>17:18 | 06:27<br>18:18 | 06:05<br>20:23          | 04:57<br>21:24 | 22:06                   |
| 18                          | 08:35<br>16:12 | 07:36<br>17:20 | 06:24<br>18:20 | 06:02<br>20:25          | 04:55<br>21:26 | 22:06                   |
| 19                          | 08:34<br>16:14 | 07:33<br>17:22 | 06:22<br>18:23 | 06:00<br>20:27          | 04:53<br>21:28 | 22:06                   |
| 20                          | 08:32<br>16:16 | 07:31<br>17:24 | 06:19<br>18:25 | 06:56-07:31/35<br>20:29 | 05:57<br>21:30 | 04:51<br>22:07          |
| 21                          | 08:31<br>16:18 | 07:29<br>17:27 | 06:16<br>18:27 | 06:55-07:30/35<br>20:31 | 05:55<br>21:31 | 04:49<br>22:07          |
| 22                          | 08:29<br>16:20 | 07:26<br>17:29 | 06:14<br>18:29 | 06:55-07:29/34<br>20:33 | 05:52<br>21:33 | 04:48<br>22:07          |
| 23                          | 08:28<br>16:23 | 07:24<br>17:31 | 06:11<br>18:31 | 06:55-07:27/32<br>20:35 | 05:50<br>21:35 | 04:46<br>22:08          |
| 24                          | 08:26<br>16:25 | 07:21<br>17:33 | 06:08<br>18:33 | 06:56-07:26/30<br>20:38 | 05:47<br>21:37 | 04:45<br>22:08          |
| 25                          | 08:25<br>16:27 | 07:19<br>17:35 | 06:06<br>18:35 | 06:56-07:24/28<br>20:40 | 05:45<br>21:38 | 06:14-06:18/4<br>22:08  |
| 26                          | 08:23<br>16:29 | 07:16<br>17:38 | 06:03<br>18:37 | 06:56-07:21/25<br>20:42 | 05:42<br>21:40 | 06:12-06:21/9<br>22:08  |
| 27                          | 08:22<br>16:31 | 07:14<br>17:40 | 06:00<br>18:39 | 06:58-07:17/19<br>20:44 | 05:40<br>21:42 | 06:10-06:23/13<br>22:07 |
| 28                          | 08:20<br>16:33 | 07:11<br>17:42 | 05:57<br>18:41 | 06:59-07:14/15<br>20:46 | 05:38<br>21:43 | 06:07-06:23/16<br>22:07 |
| 29                          | 08:18<br>16:35 |                | 05:55<br>18:43 | 07:02-07:10/8<br>20:48  | 05:35<br>21:45 | 06:05-06:24/19<br>22:07 |
| 30                          | 08:16<br>16:37 |                | 06:52<br>19:45 |                         | 05:33<br>21:46 | 06:03-06:24/21<br>22:07 |
| 31                          | 08:14<br>16:40 |                | 06:49<br>19:48 |                         | 04:35<br>21:48 |                         |
| Potential sun hours         | 235            | 265            | 365            | 425                     | 507            | 528                     |
| Sum of minutes with flicker | 0              | 0              | 545            | 82                      | 290            | 0                       |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

## SHADOW - Calendar per WTG

Calculation: Alternative - Worst &amp; Real case WTG: 24 - 33-C

Assumptions for shadow calculations

Reference year for calendar

2025

Sunshine probability S (Average daily sunshine hours) []

| Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 1,17 | 2,29 | 4,58 | 6,82 | 8,69 | 9,44 | 8,63 | 7,75 | 5,49 | 2,82 | 0,76 | 0,60 |

Operational time

| N   | NNE | ENE | E   | ESE | SSE | S   | SSW | WSW   | W     | WNW | NNW | Sum   |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-----|-------|
| 373 | 431 | 565 | 449 | 510 | 745 | 768 | 916 | 1 192 | 1 023 | 777 | 489 | 8 238 |

Idle start wind speed3,0m/s

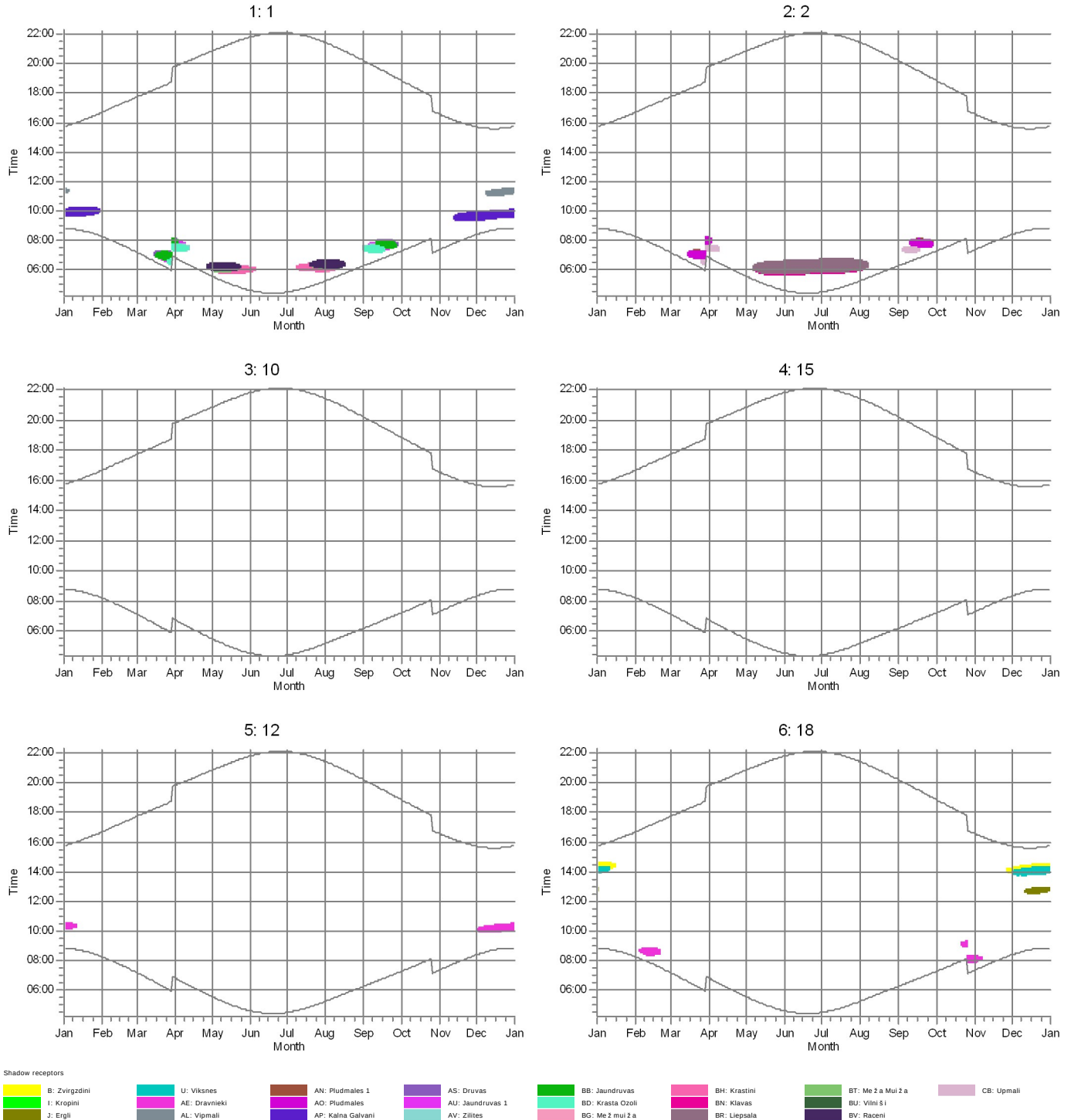
|                             | July                          | August                        | September                     | October                       | November       | December       |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|----------------|
| 1                           | 04:27<br>22:06                | 05:13 06:15-06:30/15<br>21:26 | 06:14<br>20:12                | 07:14 07:45-08:10/25<br>18:52 | 07:19<br>16:34 | 08:21<br>15:43 |
| 2                           | 04:28<br>22:06                | 05:14 06:14-06:32/18<br>21:24 | 06:16<br>20:09                | 07:16 07:47-08:09/22<br>18:49 | 07:21<br>16:32 | 08:23<br>15:42 |
| 3                           | 04:29<br>22:05                | 05:16 06:12-06:32/20<br>21:22 | 06:18<br>20:07                | 07:18 07:49-08:07/18<br>18:46 | 07:24<br>16:30 | 08:24<br>15:41 |
| 4                           | 04:30<br>22:05                | 05:18 06:12-06:33/21<br>21:19 | 06:20<br>20:04                | 07:20 07:51-08:04/13<br>18:44 | 07:26<br>16:27 | 08:26<br>15:40 |
| 5                           | 04:31<br>22:04                | 05:20 06:11-06:33/22<br>21:17 | 06:22<br>20:01                | 07:22 07:54-08:00/6<br>18:41  | 07:28<br>16:25 | 08:27<br>15:39 |
| 6                           | 04:32<br>22:03                | 05:22 06:11-06:34/23<br>21:15 | 06:24<br>19:59                | 07:24<br>18:38                | 07:30<br>16:23 | 08:29<br>15:38 |
| 7                           | 04:33<br>22:03                | 05:24 06:10-06:34/24<br>21:13 | 06:26<br>19:56                | 07:26<br>18:36                | 07:32<br>16:21 | 08:31<br>15:38 |
| 8                           | 04:34<br>22:02                | 05:26 06:10-06:34/24<br>21:11 | 06:28<br>19:53                | 07:28<br>18:33                | 07:34<br>16:19 | 08:32<br>15:37 |
| 9                           | 04:35<br>22:01                | 05:28 06:10-06:34/24<br>21:09 | 06:30<br>19:51                | 07:30<br>18:30                | 07:37<br>16:17 | 08:33<br>15:37 |
| 10                          | 04:36<br>22:00                | 05:30 06:10-06:34/24<br>21:06 | 06:32<br>19:48                | 07:32<br>18:28                | 07:39<br>16:15 | 08:35<br>15:36 |
| 11                          | 04:38<br>21:59                | 05:32 06:10-06:34/24<br>21:04 | 06:34<br>19:45                | 07:34<br>18:25                | 07:41<br>16:13 | 08:36<br>15:36 |
| 12                          | 04:39<br>21:58                | 05:34 06:10-06:34/24<br>21:02 | 06:36<br>19:43                | 07:37<br>18:23                | 07:43<br>16:11 | 08:37<br>15:36 |
| 13                          | 04:40<br>21:57                | 05:36 06:10-06:32/22<br>20:59 | 06:38<br>19:40                | 07:39<br>18:20                | 07:45<br>16:09 | 08:38<br>15:35 |
| 14                          | 04:42<br>21:55                | 05:38 06:12-06:32/20<br>20:57 | 06:40<br>19:37                | 07:41<br>18:18                | 07:47<br>16:07 | 08:39<br>15:35 |
| 15                          | 04:43<br>21:54                | 05:40 06:14-06:31/17<br>20:55 | 06:42 07:51-08:02/11<br>19:35 | 07:43<br>18:15                | 07:49<br>16:05 | 08:41<br>15:35 |
| 16                          | 04:45<br>21:53                | 05:42 06:16-06:30/14<br>20:52 | 06:44 07:48-08:04/16<br>19:32 | 07:45<br>18:12                | 07:52<br>16:04 | 08:42<br>15:35 |
| 17                          | 04:46<br>21:51                | 05:44 06:18-06:28/10<br>20:50 | 06:46 07:46-08:06/20<br>19:29 | 07:47<br>18:10                | 07:54<br>16:02 | 08:42<br>15:35 |
| 18                          | 04:48<br>21:50                | 05:46 06:20-06:26/6<br>20:47  | 06:48 07:44-08:10/26<br>19:27 | 07:49<br>18:07                | 07:56<br>16:00 | 08:43<br>15:35 |
| 19                          | 04:49<br>21:49                | 05:48<br>20:45                | 06:50 07:43-08:12/29<br>19:24 | 07:51<br>18:05                | 07:58<br>15:59 | 08:44<br>15:36 |
| 20                          | 04:51<br>21:47                | 05:50<br>20:43                | 06:52 07:42-08:13/31<br>19:21 | 07:53<br>18:02                | 08:00<br>15:57 | 08:45<br>15:36 |
| 21                          | 04:53<br>21:46                | 05:52<br>20:40                | 06:54 07:41-08:14/33<br>19:19 | 07:55<br>18:00                | 08:02<br>15:55 | 08:45<br>15:36 |
| 22                          | 04:54<br>21:44                | 05:54<br>20:38                | 06:56 07:40-08:15/35<br>19:16 | 07:58<br>17:57                | 08:04<br>15:54 | 08:46<br>15:37 |
| 23                          | 04:56<br>21:42                | 05:56<br>20:35                | 06:58 07:40-08:15/35<br>19:13 | 08:00<br>17:55                | 08:06<br>15:52 | 08:47<br>15:37 |
| 24                          | 04:58<br>21:41                | 05:58<br>20:33                | 07:00 07:40-08:15/35<br>19:10 | 08:02<br>17:53                | 08:08<br>15:51 | 08:47<br>15:38 |
| 25                          | 05:00<br>21:39                | 06:00<br>20:30                | 07:02 07:39-08:15/36<br>19:08 | 08:04<br>17:50                | 08:10<br>15:50 | 08:47<br>15:38 |
| 26                          | 05:01<br>21:37                | 06:02<br>20:28                | 07:04 07:39-08:15/36<br>19:05 | 07:06<br>16:48                | 08:12<br>15:48 | 08:48<br>15:39 |
| 27                          | 05:03<br>21:35                | 06:04<br>20:25                | 07:06 07:40-08:14/34<br>19:02 | 07:08<br>16:45                | 08:14<br>15:47 | 08:48<br>15:40 |
| 28                          | 05:05<br>21:33                | 06:06<br>20:22                | 07:08 07:40-08:14/34<br>19:00 | 07:11<br>16:43                | 08:15<br>15:46 | 08:48<br>15:41 |
| 29                          | 05:07<br>21:32                | 06:08<br>20:20                | 07:10 07:41-08:13/32<br>18:57 | 07:13<br>16:41                | 08:17<br>15:45 | 08:48<br>15:42 |
| 30                          | 05:09 06:18-06:26/8<br>21:30  | 06:10<br>20:17                | 07:12 07:43-08:12/29<br>18:54 | 07:15<br>16:38                | 08:19<br>15:44 | 08:48<br>15:43 |
| 31                          | 05:11 06:16-06:29/13<br>21:28 | 06:12<br>20:15                |                               | 07:17<br>16:36                |                | 08:48<br>15:44 |
| Potential sun hours         | 529                           | 470                           | 385                           | 324                           | 248            | 217            |
| Sum of minutes with flicker | 21                            | 352                           | 472                           | 84                            | 0              | 0              |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |
|--------------|------------------|---------------------------------|--------------------------------|----------------------|
|              | Sun set (hh:mm)  | First time (hh:mm) with flicker | Last time (hh:mm) with flicker | Minutes with flicker |

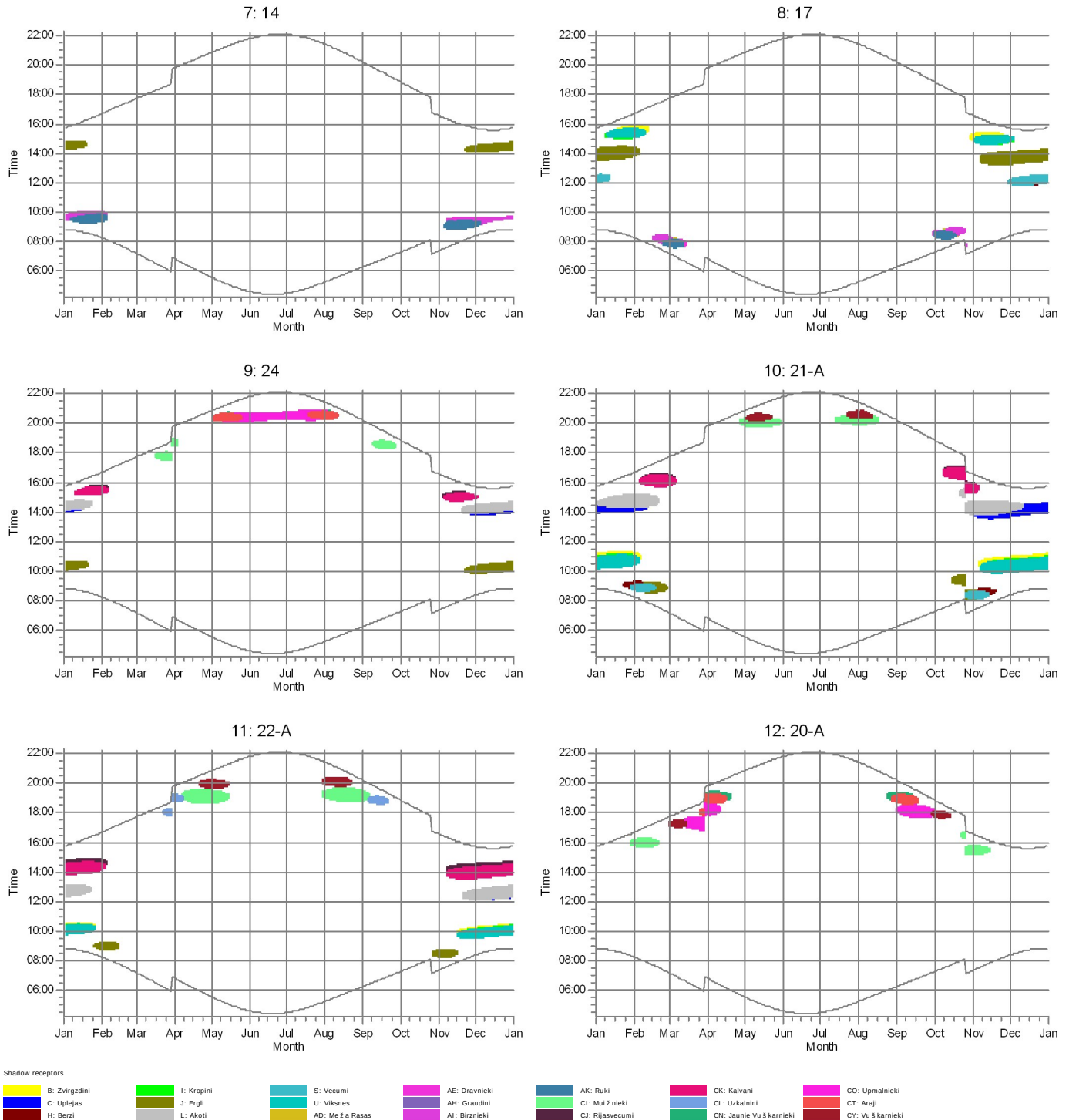
## SHADOW - Calendar per WTG, graphical

Calculation: Alternative - Worst & Real case



## SHADOW - Calendar per WTG, graphical

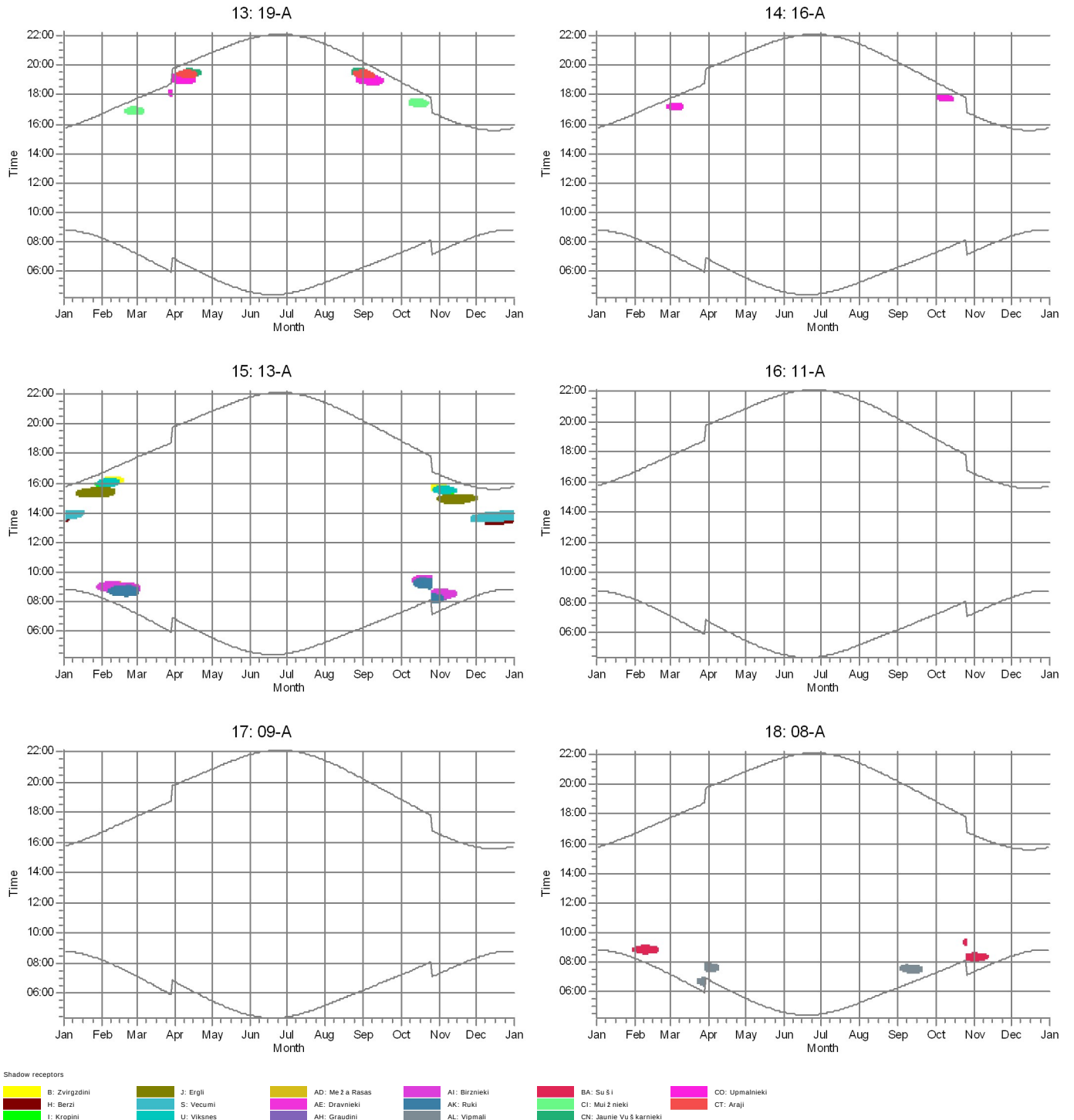
Calculation: Alternative - Worst & Real case





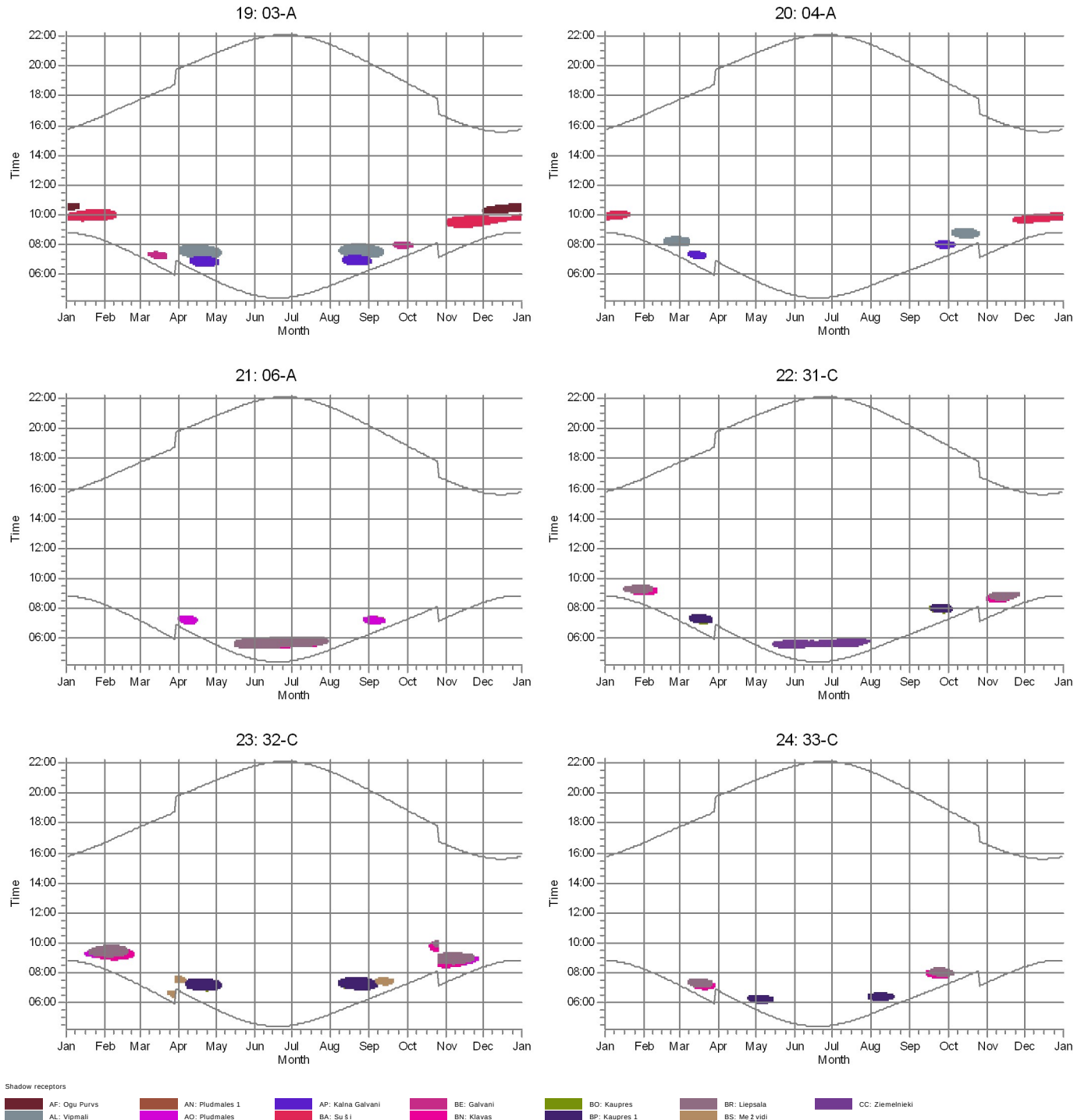
## SHADOW - Calendar per WTG, graphical

Calculation: Alternative - Worst & Real case



## SHADOW - Calendar per WTG, graphical

Calculation: Alternative - Worst & Real case



## SHADOW - Map

Calculation: Alternative - Worst & Real case

