

## Performance of Grid-connected PV

### PVGIS estimates of solar electricity generation

Location: 50°11'27" North, 5°27'58" West, Elevation: 100 m a.s.l.,

Nominal power of the PV system: 3.8 kW (crystalline silicon)

Estimated losses due to temperature: 7.8% (using local ambient temperature)

Estimated loss due to angular reflectance effects: 2.8%

Other losses (cables, inverter etc.): 7.0%

Combined PV system losses: 16.7%

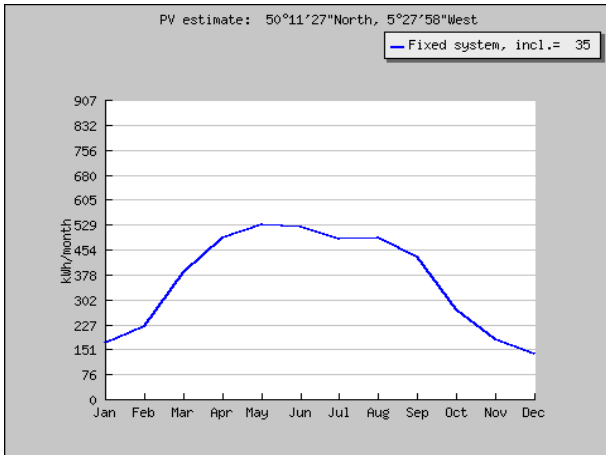
| <b>Fixed system: inclination=35 deg.,<br/>orientation=0 deg.</b> |           |           |           |           |
|--|-----------|-----------|-----------|-----------|
| <b>Month</b>   | <b>Ed</b> | <b>Em</b> | <b>Hd</b> | <b>Hm</b> |
| Jan  | 5.49      | 170       | 1.63      | 50.6      |
| Feb  | 7.94      | 222       | 2.40      | 67.1      |
| Mar  | 12.40     | 384       | 3.81      | 118       |
| Apr  | 16.30     | 490       | 5.19      | 156       |
| May  | 17.10     | 529       | 5.50      | 171       |
| Jun  | 17.40     | 523       | 5.71      | 171       |
| Jul  | 15.70     | 486       | 5.16      | 160       |
| Aug  | 15.80     | 488       | 5.18      | 160       |
| Sep  | 14.40     | 433       | 4.64      | 139       |
| Oct  | 8.83      | 274       | 2.76      | 85.7      |
| Nov  | 6.07      | 182       | 1.84      | 55.2      |
| Dec  | 4.46      | 138       | 1.33      | 41.2      |
| Year   | 11.80     | 360       | 3.77      | 115       |
| Total for<br>year  |           | 4320      |           | 1380      |

Ed: Average daily electricity production from the given system (kWh)

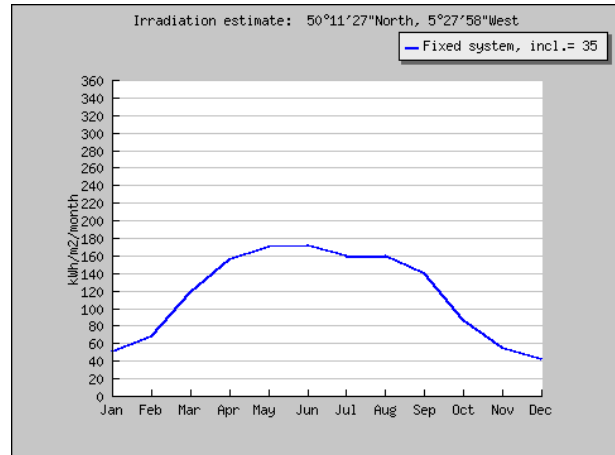
Em: Average monthly electricity production from the given system (kWh)

Hd: Average daily sum of global irradiation per square meter received by the modules of the given system (kWh/m<sup>2</sup>)

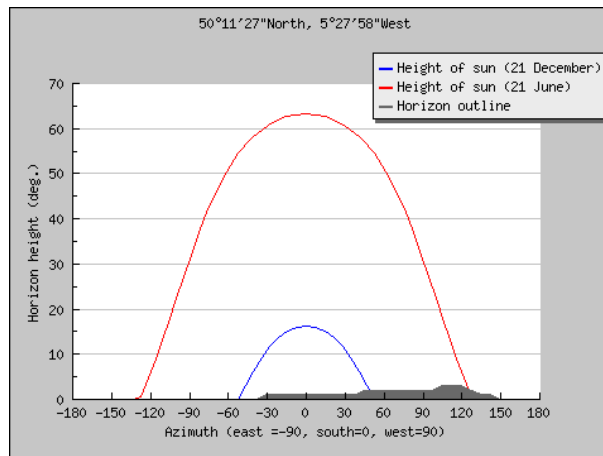
Hm: Average sum of global irradiation per square meter received by the modules of the given system (kWh/m<sup>2</sup>)



Monthly energy output from fixed-angle PV system



Monthly in-plane irradiation for fixed angle



Outline of horizon with sun path for winter and summer solstice

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