

# Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

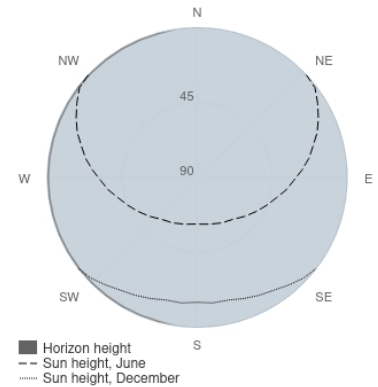
## Provided inputs:

Latitude/Longitude: 51.396, -0.282  
 Horizon: Calculated  
 Database used: PVGIS-SARAH  
 PV technology: Crystalline silicon  
 PV installed: 6 kWp  
 System loss: 14 %

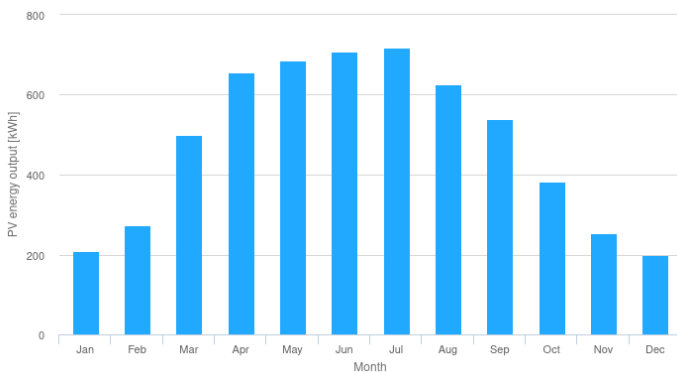
## Simulation outputs

Slope angle: 35 °  
 Azimuth angle: 0 °  
 Yearly PV energy production: 5745.57 kWh  
 Yearly in-plane irradiation: 1213.92 kWh/m<sup>2</sup>  
 Year-to-year variability: 226.51 kWh  
 Changes in output due to:  
 Angle of incidence: -3.18 %  
 Spectral effects: 1.88 %  
 Temperature and low irradiance: -7.01 %  
 Total loss: -21.12 %

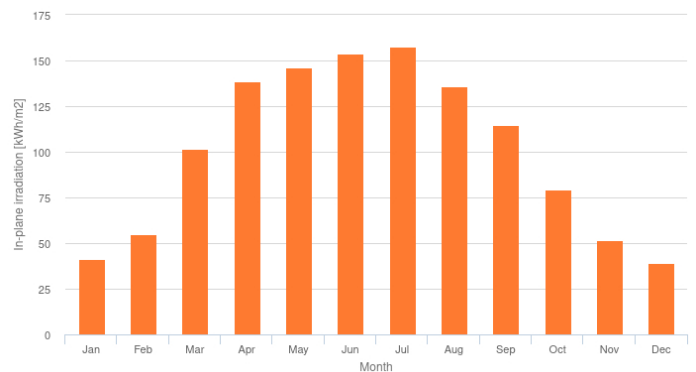
## Outline of horizon at chosen location:



## Monthly energy output from fix-angle PV system:



## Monthly in-plane irradiation for fixed-angle:



## Monthly PV energy and solar irradiation

Month	E <sub>m</sub>	H(i) <sub>m</sub>	SD <sub>m</sub>
January	208.4	41.5	31.5
February	272.7	54.8	77.7
March	498.6	101.5	101.7
April	656.9	138.4	98.8
May	684.6	146.1	64.7
June	708.0	153.6	90.6
July	718.1	157.7	69.2
August	625.2	135.8	80.0
September	538.5	114.6	50.5
October	382.8	79.2	49.7
November	254.4	51.4	53.3
December	197.6	39.3	39.0

E<sub>m</sub>: Average monthly electricity production from the given system [kWh].

H(i)<sub>m</sub>: Average monthly sum of global irradiation per square meter received by the modules of the given system [kWh/m<sup>2</sup>].

SD<sub>m</sub>: Standard deviation of the monthly electricity production due to year-to-year variation [kWh].

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