

# Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

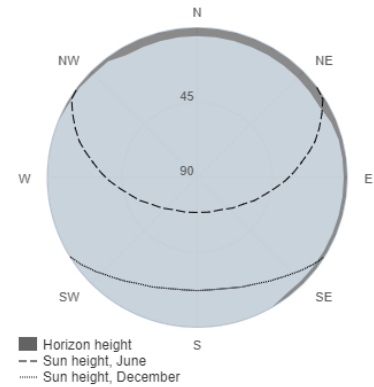
## Provided inputs:

Latitude/Longitude: 44.075, 3.085  
 Horizon: Calculated  
 Database used: PVGIS-SARAH  
 PV technology: Crystalline silicon  
 PV installed: 3 kWp  
 System loss: 2 %

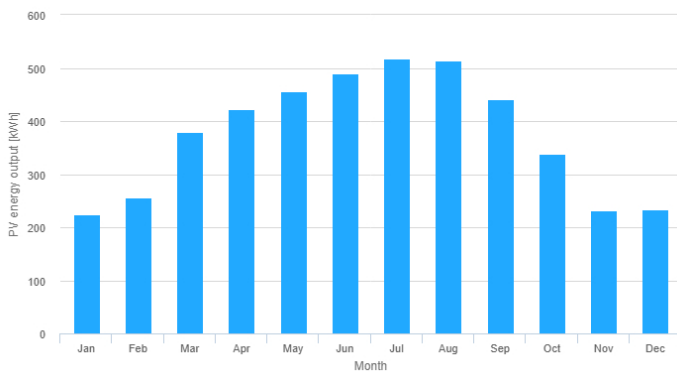
## Simulation outputs

Slope angle: 36 (opt) °  
 Azimuth angle: -1 (opt) °  
 Yearly PV energy production: 4510 kWh  
 Yearly in-plane irradiation: 1630 kWh/m<sup>2</sup>  
 Year to year variability: 193.00 %  
 Changes in output due to:  
 Angle of incidence: -2.8 %  
 Spectral effects: 1.2 %  
 Temperature and low irradiance: -4.5 %  
 Total loss: -8 %

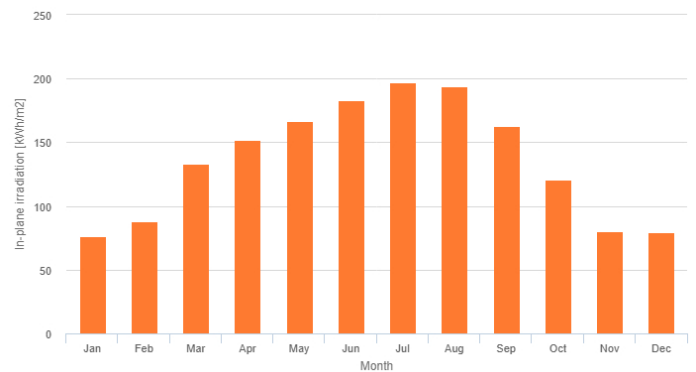
## Outline of horizon at chosen location:



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



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



## Monthly PV energy and solar irradiation

Month	Em	Hm	SDm
January	225	76.2	38
February	257	88.1	41.4
March	379	133	64.6
April	423	152	65.4
May	457	167	58.9
June	490	183	50.7
July	518	197	41.8
August	514	194	31.6
September	442	163	28.3
October	339	121	50
November	232	79.9	46.7
December	234	79.1	48.1

Em: Average monthly electricity production from the given system [kWh].

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

SDm: Standard deviation of the monthly electricity production due to year-to-year variation [kWh].