Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

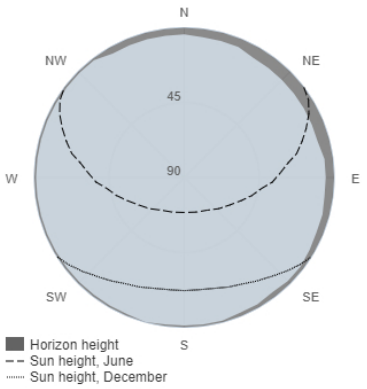
Provided inputs:

Latitude/Longitude:	44.537, 2.016
Horizon:	Calculated
Database used:	PVGIS-SARAH
PV technology:	Crystalline silicon
PV installed:	3 kWp
System loss:	2 %

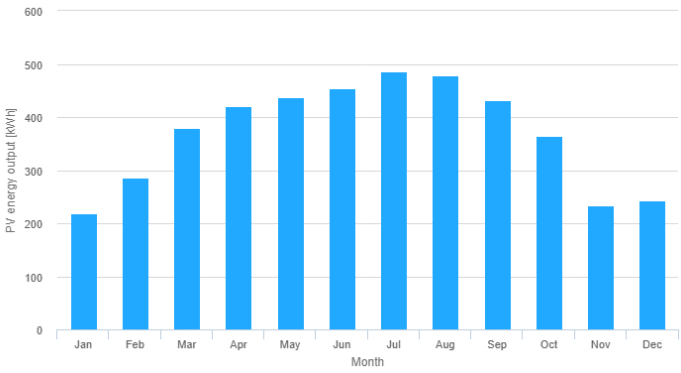
Simulation outputs

Slope angle:	37 (opt) °
Azimuth angle:	0 (opt) °
Yearly PV energy production:	4430 kWh
Yearly in-plane irradiation:	1630 kWh/m²
Year to year variability:	189.00 %
Changes in output due to:	
Angle of incidence:	-2.8 %
Spectral effects:	1.3 %
Temperature and low irradiance:	-6 %
Total loss:	-9.3 %

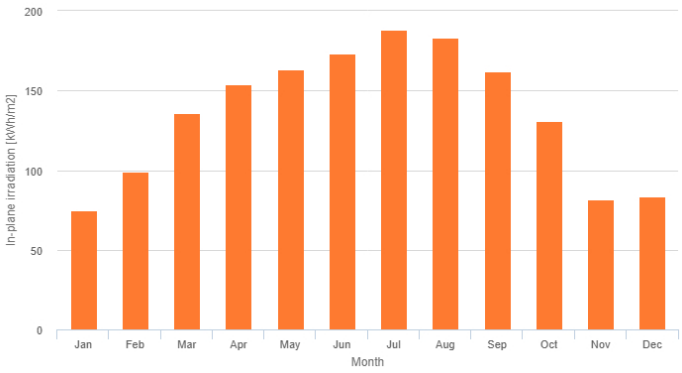
Outline of horizon at chosen location:



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	219	75	43.2
February	286	99.2	58.4
March	379	136	59.2
April	420	154	70.2
May	438	163	47.3
June	454	173	55
July	486	188	40.8
August	478	183	32.2
September	431	162	36.3
October	364	131	38
November	233	81.6	46.5
December	243	83.5	60.6

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/m²].

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

Joint Research Centre

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