Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

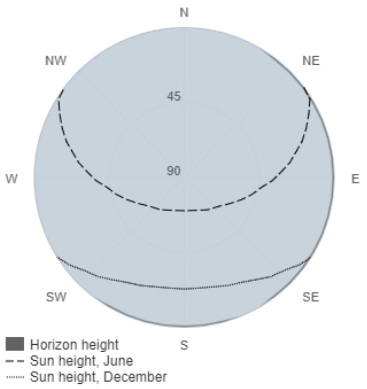
Provided inputs:

Latitude/Longitude:	43.477, 1.507
Horizon:	Calculated
Database used:	PVGIS-SARAH
PV technology:	Crystalline silicon
PV installed:	3 kWp
System loss:	2 %

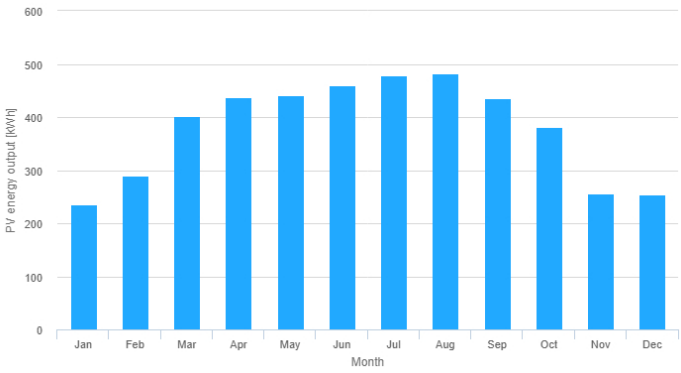
Simulation outputs

Slope angle:	37 (opt) °
Azimuth angle:	1 (opt) °
Yearly PV energy production:	4550 kWh
Yearly in-plane irradiation:	1670 kWh/m²
Year to year variability:	183.00 %
Changes in output due to:	
Angle of incidence:	-2.8 %
Spectral effects:	1.2 %
Temperature and low irradiance:	-6.1 %
Total loss:	-9.4 %

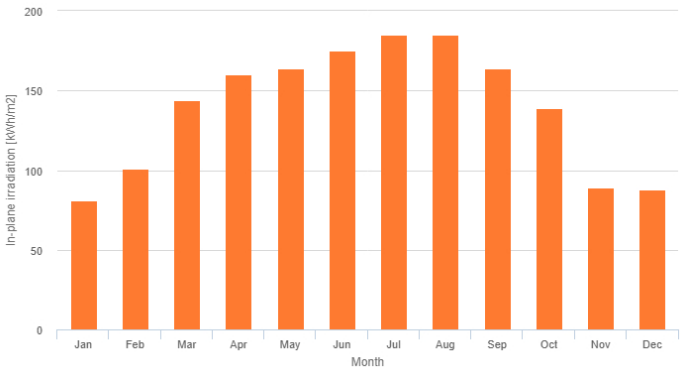
Outline of horizon at chosen location:



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	235	80.9	38.2
February	289	101	45.2
March	401	144	58.3
April	437	160	61.7
May	441	164	38.8
June	459	175	40.8
July	479	185	25.4
August	482	185	30.1
September	436	164	27.7
October	382	139	44.9
November	256	89.4	47.1
December	255	87.6	46.5

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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