Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

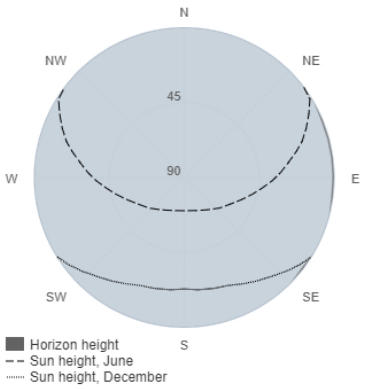
Provided inputs:

Latitude/Longitude:	43.905, 0.673
Horizon:	Calculated
Database used:	PVGIS-SARAH
PV technology:	Crystalline silicon
PV installed:	3 kWp
System loss:	2 %

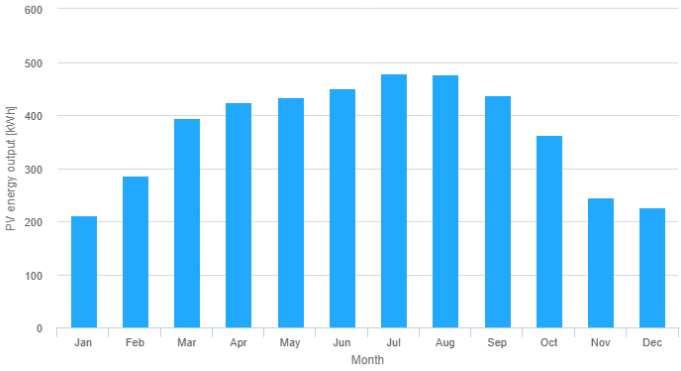
Simulation outputs

Slope angle:	37 (opt) °
Azimuth angle:	1 (opt) °
Yearly PV energy production:	4430 kWh
Yearly in-plane irradiation:	1640 kWh/m²
Year to year variability:	161.00 %
Changes in output due to:	
Angle of incidence:	-2.8 %
Spectral effects:	1.2 %
Temperature and low irradiance:	-6.6 %
Total loss:	-9.9 %

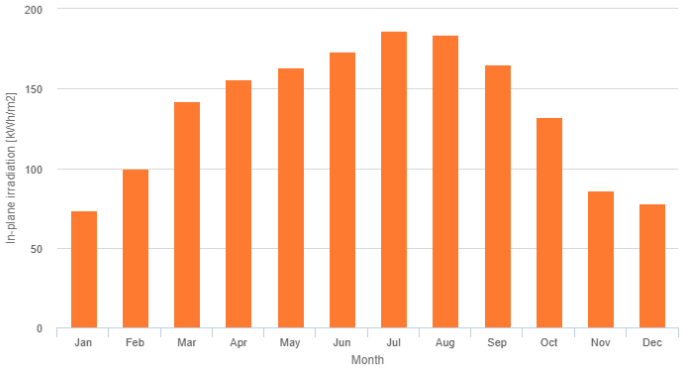
Outline of horizon at chosen location:



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	212	73.4	28.7
February	286	100	45.9
March	395	142	58.7
April	424	156	56.6
May	433	163	39.4
June	451	173	43.6
July	479	186	23.3
August	477	184	22.5
September	438	165	29.4
October	363	132	37.4
November	245	85.8	48.6
December	226	78.1	52.4

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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