Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

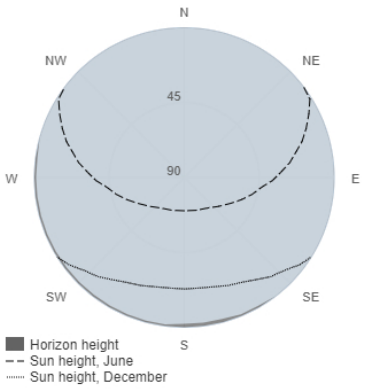
Provided inputs:

Latitude/Longitude:	43.383, 0.071
Horizon:	Calculated
Database used:	PVGIS-SARAH
PV technology:	Crystalline silicon
PV installed:	3 kWp
System loss:	2 %

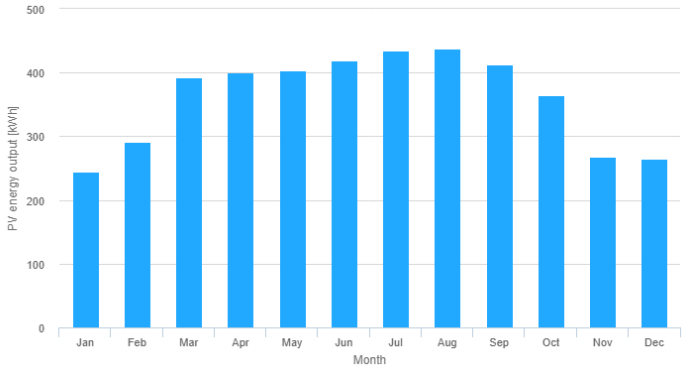
Simulation outputs

Slope angle:	38 (opt) °
Azimuth angle:	-2 (opt) °
Yearly PV energy production:	4340 kWh
Yearly in-plane irradiation:	1610 kWh/m²
Year to year variability:	139.00 %
Changes in output due to:	
Angle of incidence:	-2.8 %
Spectral effects:	1.3 %
Temperature and low irradiance:	-7.1 %
Total loss:	-10.3 %

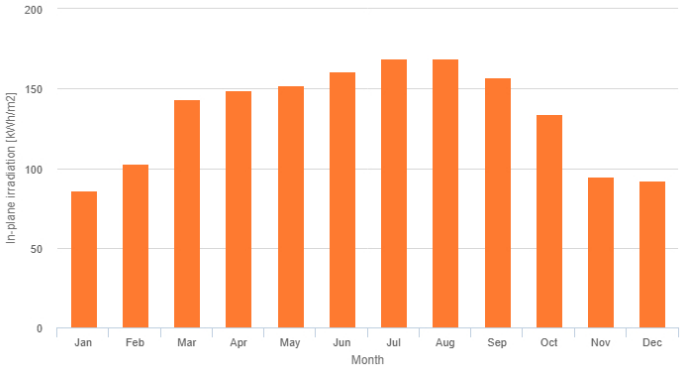
Outline of horizon at chosen location:



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	245	85.8	36
February	292	103	49.1
March	393	143	56
April	401	149	49.3
May	403	152	44
June	419	161	32.8
July	435	169	24.1
August	438	169	25.8
September	413	157	18.2
October	365	134	37.4
November	268	94.9	52
December	265	92.4	43.5

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].

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