Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

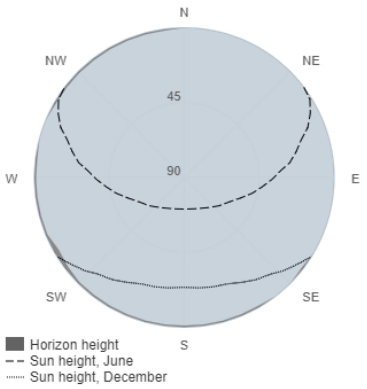
Provided inputs:

Latitude/Longitude:	42.709, 2.920
Horizon:	Calculated
Database used:	PVGIS-SARAH
PV technology:	Crystalline silicon
PV installed:	3 kWp
System loss:	2 %

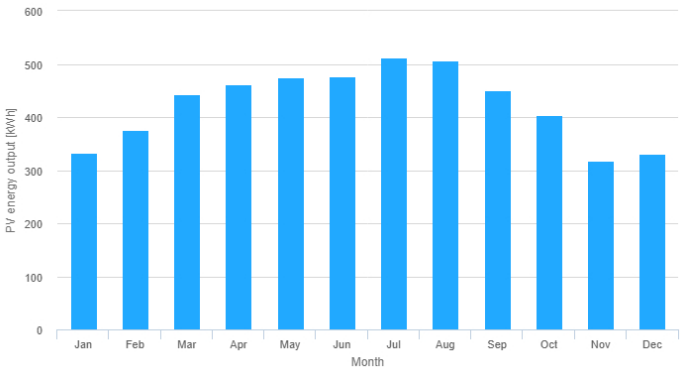
Simulation outputs

Slope angle:	39 (opt) °
Azimuth angle:	-2 (opt) °
Yearly PV energy production:	5090 kWh
Yearly in-plane irradiation:	1890 kWh/m²
Year to year variability:	311.00 %
Changes in output due to:	
Angle of incidence:	-2.6 %
Spectral effects:	1.1 %
Temperature and low irradiance:	-7 %
Total loss:	-10.2 %

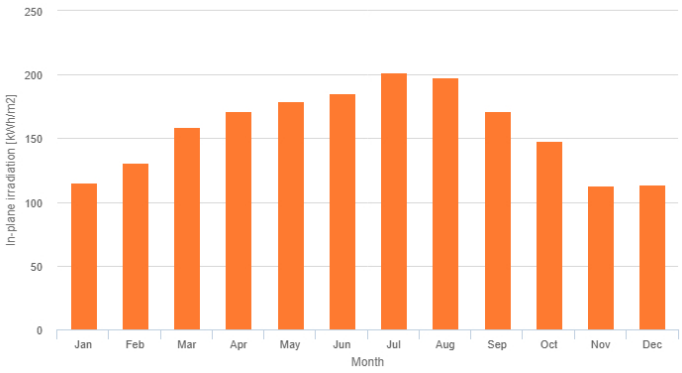
Outline of horizon at chosen location:



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	332	115	71.7
February	375	131	74.6
March	443	159	59.4
April	461	171	51.5
May	474	179	38.3
June	477	185	40.5
July	513	202	25.5
August	507	198	25.6
September	450	171	35.3
October	404	148	45.6
November	318	113	62.1
December	331	114	32.2

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

Report generated on 2018/06/26