Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

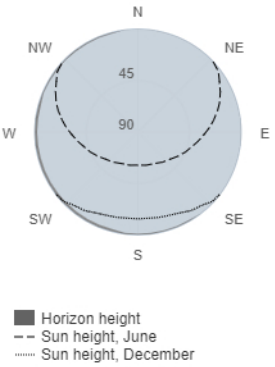
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	9.18 kWp
System loss:	14 %

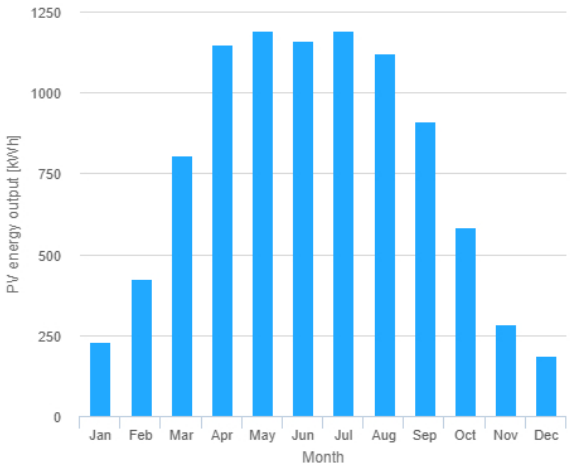
Simulation outputs

Slope angle:	35 °
Azimuth angle:	0 °
Yearly PV energy production:	9230 kWh
Yearly in-plane irradiation:	1290 kWh/m²
Year to year variability:	481.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.8 %
Temperature and low irradiance:	-8.2 %
Total loss:	-22.2 %

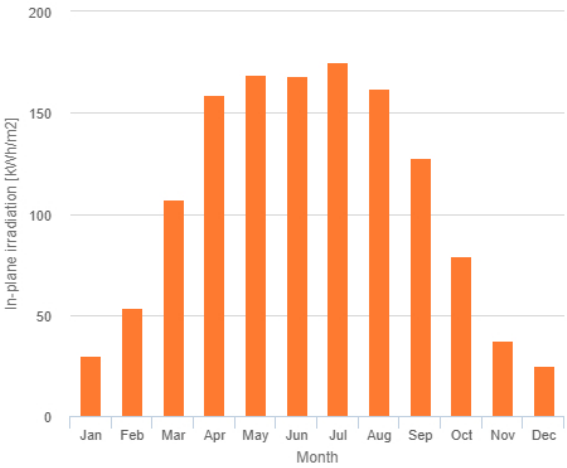
Outline of horizon at chosen location:



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	230	29.7	34
February	423	53.8	127
March	805	107	145
April	1150	159	166
May	1190	169	162
June	1160	168	94.8
July	1190	175	125
August	1120	162	109
September	912	128	114
October	586	79.1	127
November	283	37.6	92.8
December	188	25	42.9

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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