Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

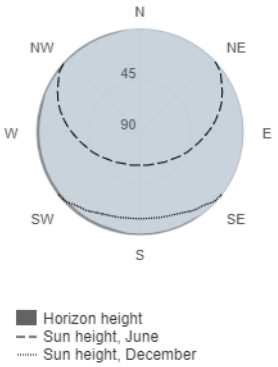
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	9.52 kWp
System loss:	14 %

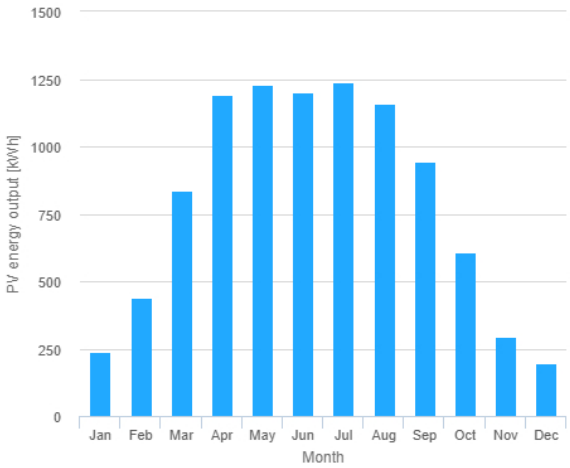
Simulation outputs

Slope angle:	35 °
Azimuth angle:	0 °
Yearly PV energy production:	9570 kWh
Yearly in-plane irradiation:	1290 kWh/m²
Year to year variability:	499.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.8 %
Temperature and low irradiance:	-8.2 %
Total loss:	-22.2 %

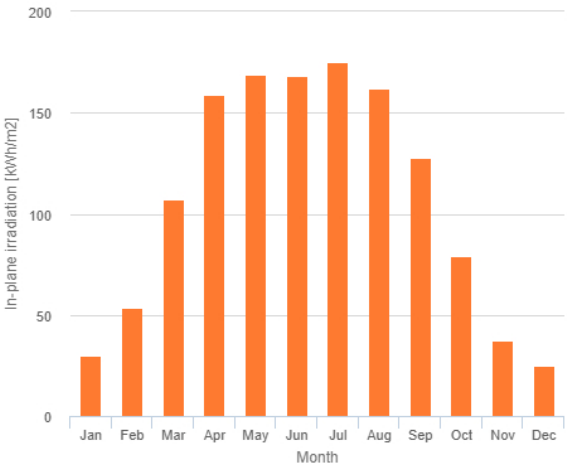
Outline of horizon at chosen location:



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	238	29.7	35.3
February	438	53.8	132
March	835	107	150
April	1190	159	172
May	1230	169	168
June	1200	168	98.3
July	1240	175	130
August	1160	162	114
September	946	128	118
October	608	79.1	131
November	293	37.6	96.2
December	195	25	44.5

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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