Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

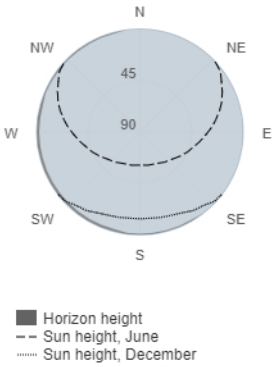
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	7.82 kWp
System loss:	14 %

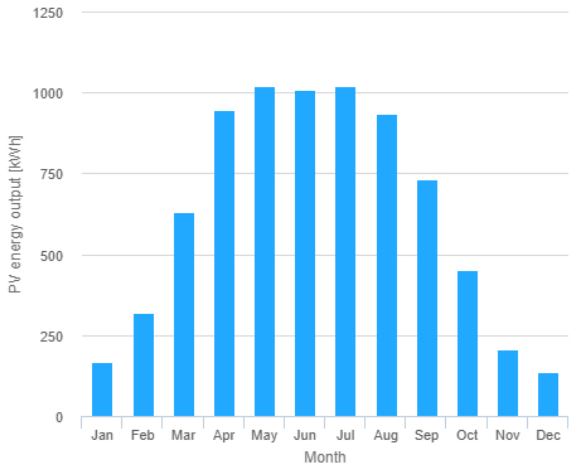
Simulation outputs

Slope angle:	35 °
Azimuth angle:	-45 °
Yearly PV energy production:	7570 kWh
Yearly in-plane irradiation:	1240 kWh/m²
Year to year variability:	346.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.7 %
Temperature and low irradiance:	-8.1 %
Total loss:	-22.1 %

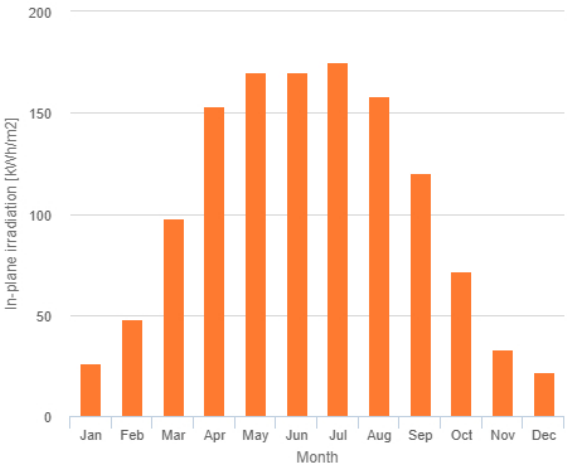
Outline of horizon at chosen location:



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	167	25.9	22.8
February	318	48	89.9
March	629	97.8	101
April	948	153	123
May	1020	170	140
June	1010	170	90.6
July	1020	175	118
August	934	158	83
September	732	120	82.3
October	451	71.6	93.4
November	207	33	63.2
December	135	21.7	29

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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