Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

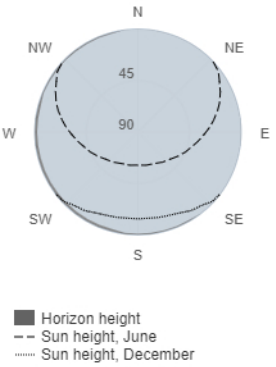
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	8.16 kWp
System loss:	14 %

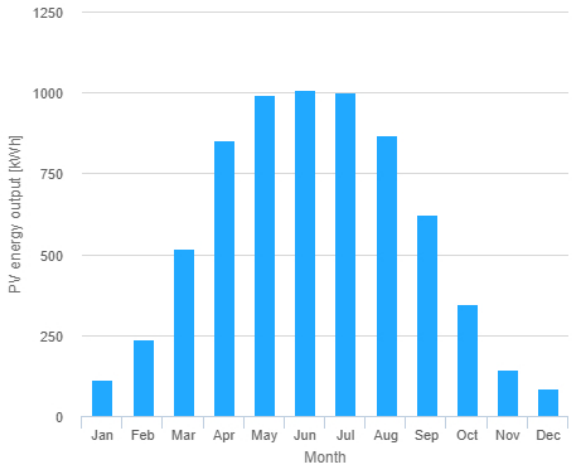
Simulation outputs

Slope angle:	35 °
Azimuth angle:	-90 °
Yearly PV energy production:	6790 kWh
Yearly in-plane irradiation:	1070 kWh/m²
Year to year variability:	242.00 %
Changes in output due to:	
Angle of incidence:	-3.6 %
Spectral effects:	1.6 %
Temperature and low irradiance:	-8 %
Total loss:	-22.5 %

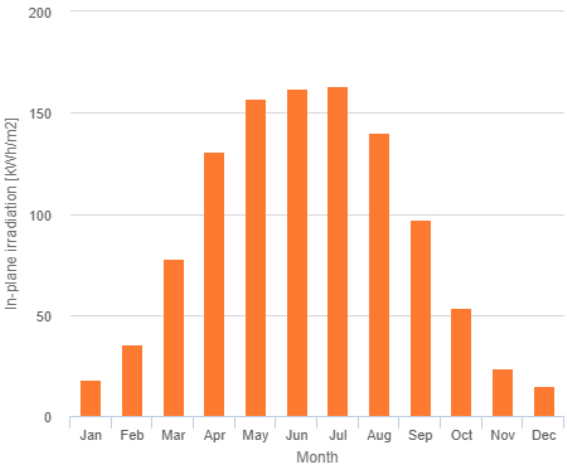
Outline of horizon at chosen location:



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	112	18.2	11.2
February	237	35.5	53.3
March	519	77.7	61.8
April	852	131	93.3
May	994	157	130
June	1010	162	89.2
July	1000	163	118
August	867	140	63.1
September	622	97.4	56.2
October	345	53.6	58.4
November	144	23.5	32.9
December	86.5	14.8	14.5

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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