Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

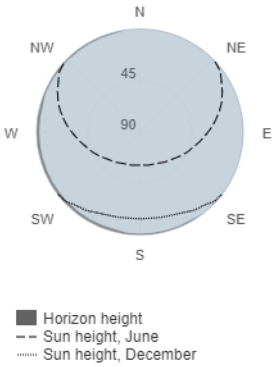
Provided inputs:

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

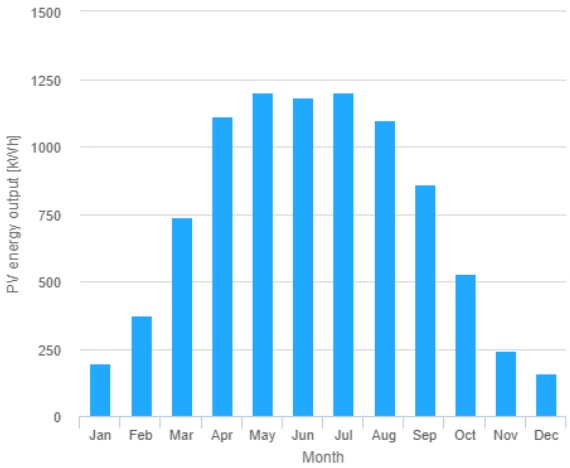
Simulation outputs

Slope angle:	35 °
Azimuth angle:	-45 °
Yearly PV energy production:	8890 kWh
Yearly in-plane irradiation:	1240 kWh/m²
Year to year variability:	406.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.7 %
Temperature and low irradiance:	-8.1 %
Total loss:	-22.1 %

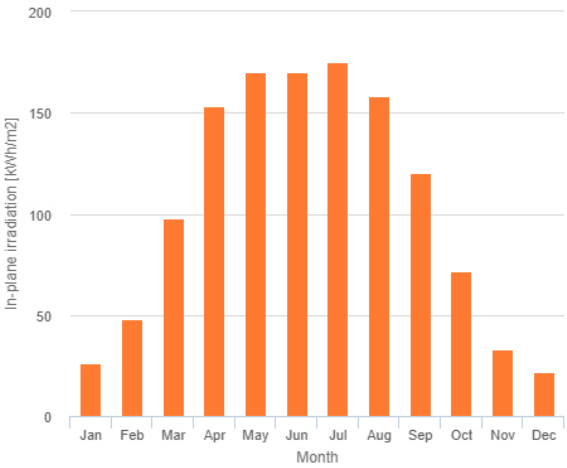
Outline of horizon at chosen location:



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	195	25.9	26.8
February	374	48	106
March	738	97.8	119
April	1110	153	145
May	1200	170	165
June	1180	170	106
July	1200	175	139
August	1100	158	97.4
September	860	120	96.6
October	529	71.6	110
November	243	33	74.2
December	158	21.7	34.1

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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