Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

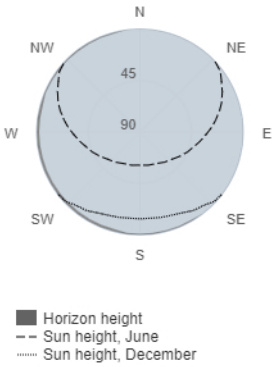
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	6.12 kWp
System loss:	14 %

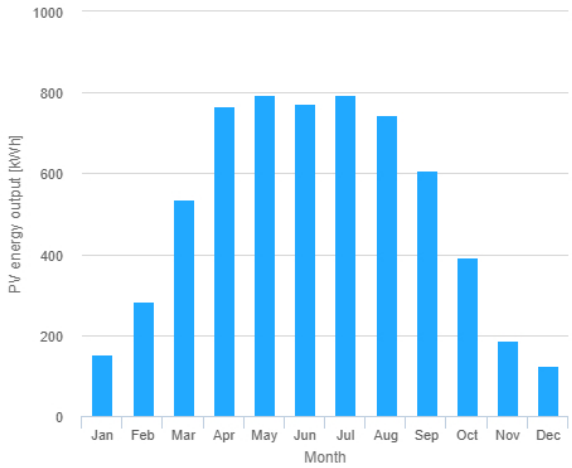
Simulation outputs

Slope angle:	35 °
Azimuth angle:	0 °
Yearly PV energy production:	6150 kWh
Yearly in-plane irradiation:	1290 kWh/m²
Year to year variability:	321.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.8 %
Temperature and low irradiance:	-8.2 %
Total loss:	-22.2 %

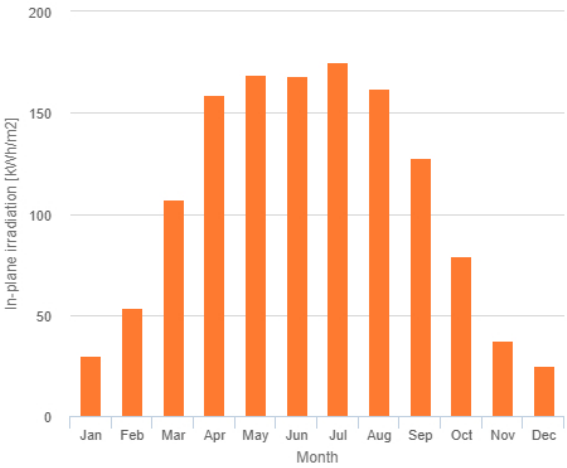
Outline of horizon at chosen location:



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	153	29.7	22.7
February	282	53.8	84.8
March	537	107	96.4
April	766	159	111
May	793	169	108
June	772	168	63.2
July	794	175	83.4
August	744	162	73
September	608	128	76.1
October	391	79.1	84.5
November	188	37.6	61.9
December	125	25	28.6

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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