Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

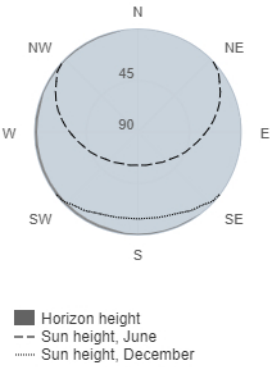
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	7.14 kWp
System loss:	14 %

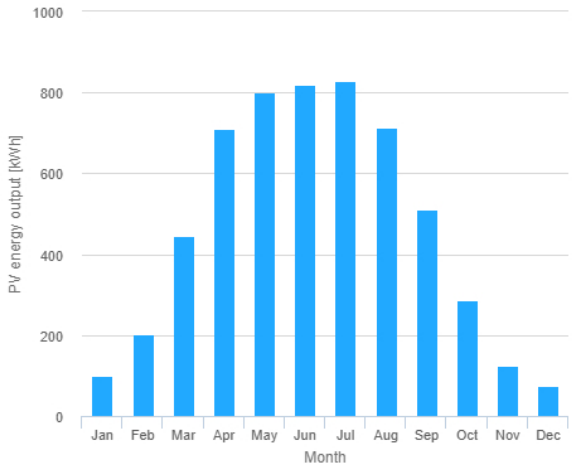
Simulation outputs

Slope angle:	35 °
Azimuth angle:	90 °
Yearly PV energy production:	5620 kWh
Yearly in-plane irradiation:	1030 kWh/m²
Year to year variability:	244.00 %
Changes in output due to:	
Angle of incidence:	-3.9 %
Spectral effects:	1.6 %
Temperature and low irradiance:	-8.7 %
Total loss:	-23.3 %

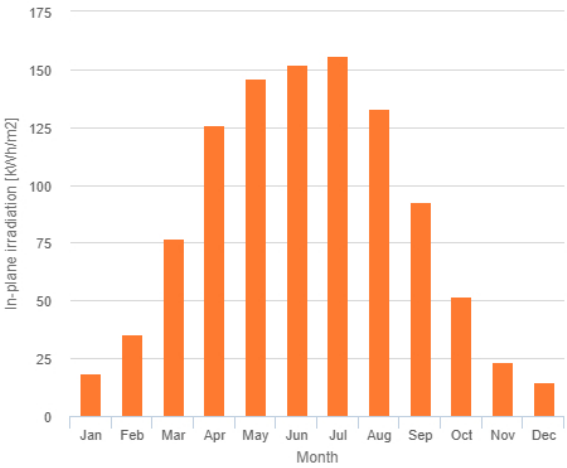
Outline of horizon at chosen location:



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	98.5	18.4	10.5
February	204	35.2	44.3
March	446	76.9	60.1
April	709	126	101
May	802	146	92.2
June	819	152	56
July	830	156	77
August	714	133	58.8
September	511	92.7	56.1
October	286	51.6	47.2
November	125	23.4	30
December	74.1	14.7	11.8

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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