Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

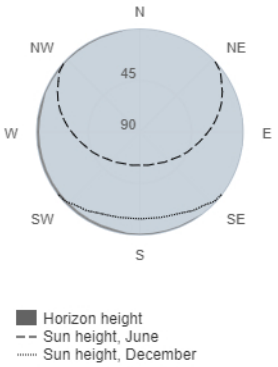
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	4.76 kWp
System loss:	14 %

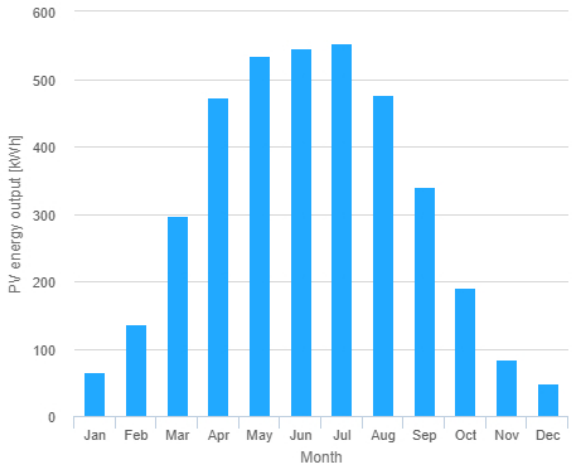
Simulation outputs

Slope angle:	35 °
Azimuth angle:	90 °
Yearly PV energy production:	3750 kWh
Yearly in-plane irradiation:	1030 kWh/m²
Year to year variability:	162.00 %
Changes in output due to:	
Angle of incidence:	-3.9 %
Spectral effects:	1.6 %
Temperature and low irradiance:	-8.7 %
Total loss:	-23.3 %

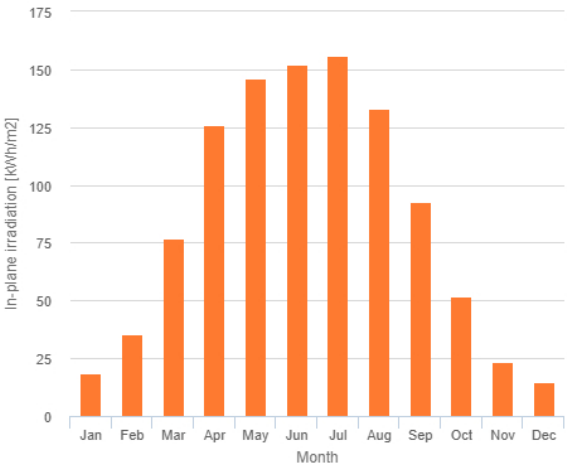
Outline of horizon at chosen location:



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	65.7	18.4	7.02
February	136	35.2	29.6
March	297	76.9	40
April	473	126	67.3
May	535	146	61.5
June	546	152	37.3
July	553	156	51.3
August	476	133	39.2
September	340	92.7	37.4
October	191	51.6	31.5
November	83.4	23.4	20
December	49.4	14.7	7.89

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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