Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

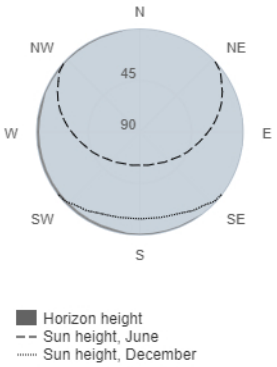
Provided inputs:

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

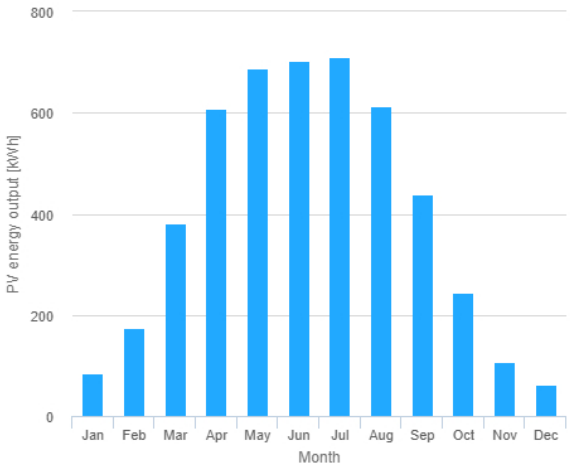
Simulation outputs

Slope angle:	35 °
Azimuth angle:	90 °
Yearly PV energy production:	4820 kWh
Yearly in-plane irradiation:	1030 kWh/m²
Year to year variability:	209.00 %
Changes in output due to:	
Angle of incidence:	-3.9 %
Spectral effects:	1.6 %
Temperature and low irradiance:	-8.7 %
Total loss:	-23.3 %

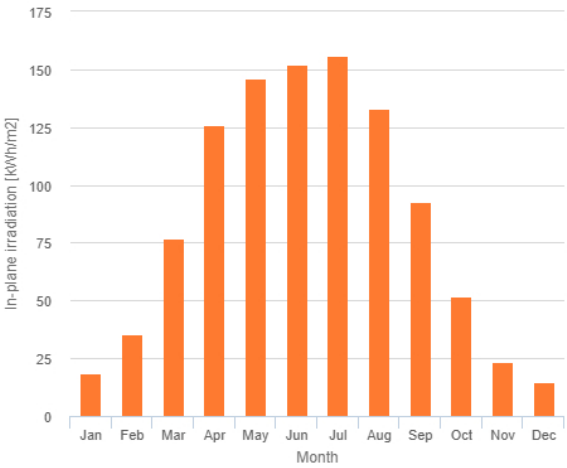
Outline of horizon at chosen location:



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	84.4	18.4	9.02
February	175	35.2	38
March	382	76.9	51.5
April	608	126	86.6
May	688	146	79
June	702	152	48
July	711	156	66
August	612	133	50.4
September	438	92.7	48.1
October	245	51.6	40.5
November	107	23.4	25.7
December	63.5	14.7	10.1

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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