Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

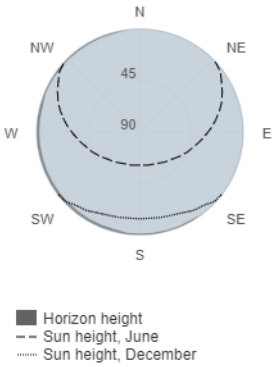
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	2.72 kWp
System loss:	14 %

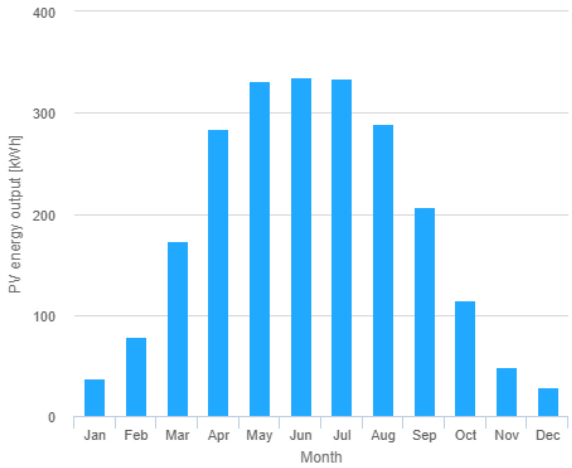
Simulation outputs

Slope angle:	35 °
Azimuth angle:	-90 °
Yearly PV energy production:	2260 kWh
Yearly in-plane irradiation:	1070 kWh/m²
Year to year variability:	80.60 %
Changes in output due to:	
Angle of incidence:	-3.6 %
Spectral effects:	1.6 %
Temperature and low irradiance:	-8 %
Total loss:	-22.5 %

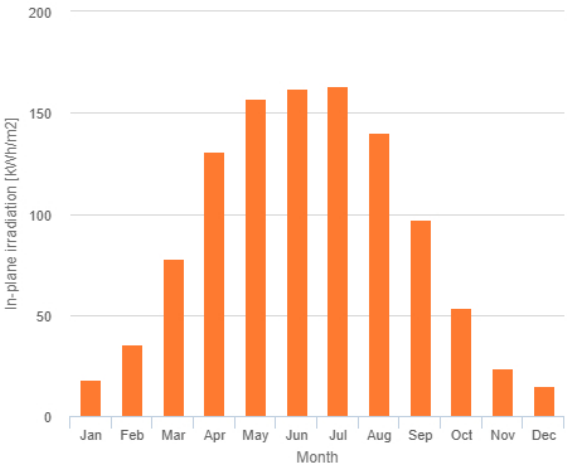
Outline of horizon at chosen location:



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	37.4	18.2	3.74
February	78.9	35.5	17.8
March	173	77.7	20.6
April	284	131	31.1
May	331	157	43.4
June	335	162	29.7
July	334	163	39.3
August	289	140	21
September	207	97.4	18.7
October	115	53.6	19.5
November	48.1	23.5	11
December	28.8	14.8	4.85

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

Report generated on 2019/10/17