Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

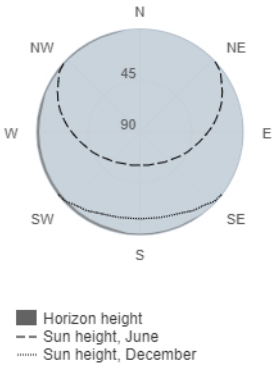
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	5.1 kWp
System loss:	14 %

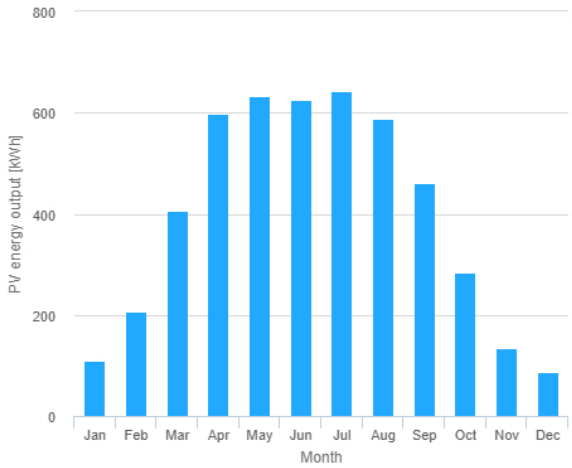
Simulation outputs

Slope angle:	35 °
Azimuth angle:	45 °
Yearly PV energy production:	4780 kWh
Yearly in-plane irradiation:	1210 kWh/m²
Year to year variability:	245.00 %
Changes in output due to:	
Angle of incidence:	-3.2 %
Spectral effects:	1.7 %
Temperature and low irradiance:	-8.5 %
Total loss:	-22.5 %

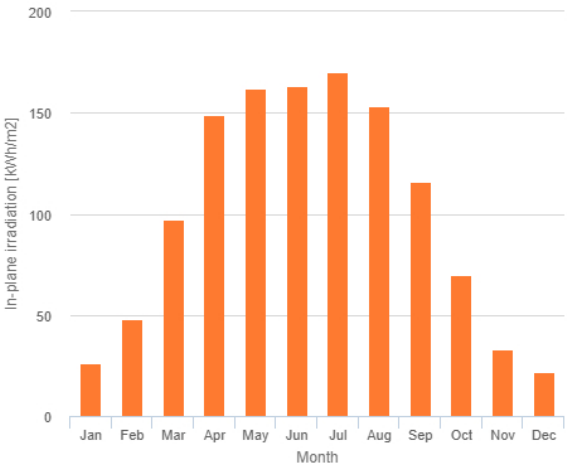
Outline of horizon at chosen location:



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	109	26.1	15.3
February	206	47.7	58.2
March	407	97.3	69.9
April	599	149	91.1
May	633	162	81.3
June	625	163	46.9
July	644	170	62.9
August	587	153	55.7
September	461	116	57.5
October	285	69.9	58.1
November	135	32.9	42
December	86.9	21.6	18.3

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