Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

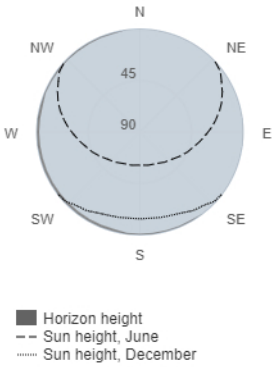
Provided inputs:

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

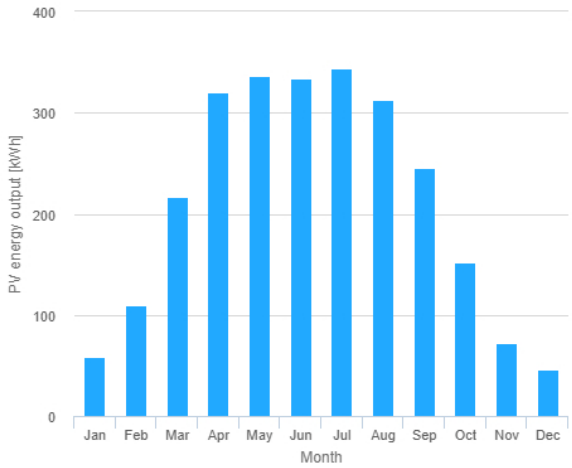
Simulation outputs

Slope angle:	35 °
Azimuth angle:	45 °
Yearly PV energy production:	2550 kWh
Yearly in-plane irradiation:	1210 kWh/m²
Year to year variability:	131.00 %
Changes in output due to:	
Angle of incidence:	-3.2 %
Spectral effects:	1.7 %
Temperature and low irradiance:	-8.5 %
Total loss:	-22.5 %

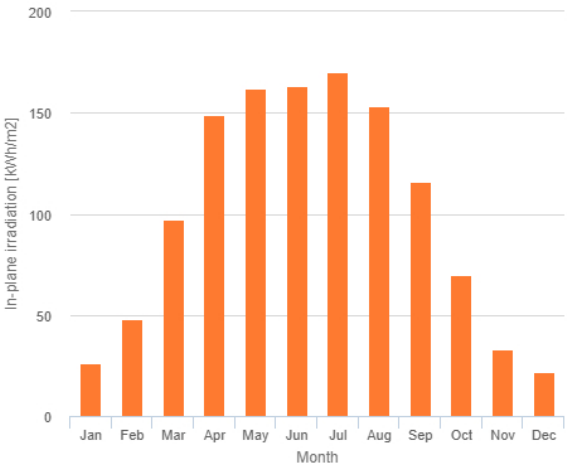
Outline of horizon at chosen location:



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	58.1	26.1	8.15
February	110	47.7	31.1
March	217	97.3	37.3
April	320	149	48.6
May	337	162	43.4
June	334	163	25
July	344	170	33.6
August	313	153	29.7
September	246	116	30.7
October	152	69.9	31
November	71.8	32.9	22.4
December	46.3	21.6	9.74

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