Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

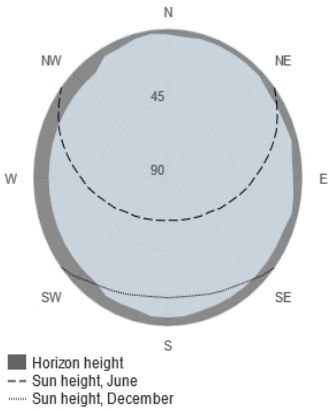
Provided inputs:

Latitude/Longitude:	49.247,16.672
Horizon:	Calculated
Database used:	PVGIS-SARAH2
PV technology:	Crystalline silicon
PV installed:	18.36 kWp
System loss:	14 %

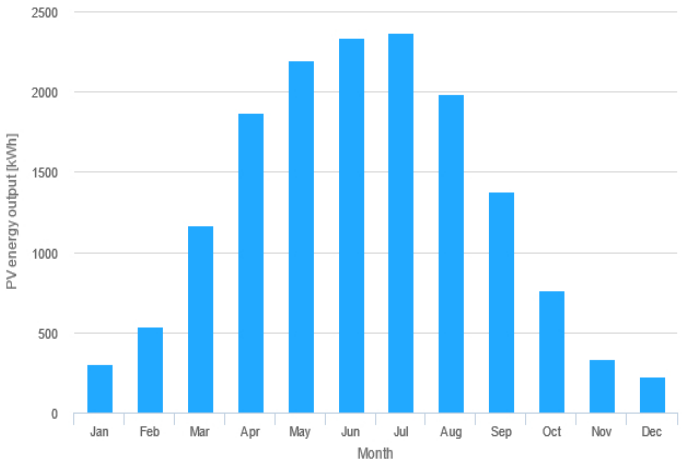
Simulation outputs

Slope angle:	21 °
Azimuth angle:	-117 °
Yearly PV energy production:	15453.77 kWh
Yearly in-plane irradiation:	1079.34 kWh/m²
Year-to-year variability:	514.43 kWh
Changes in output due to:	
Angle of incidence:	-4.53 %
Spectral effects:	1.35 %
Temperature and low irradiance:	-6.29 %
Total loss:	-22.02 %

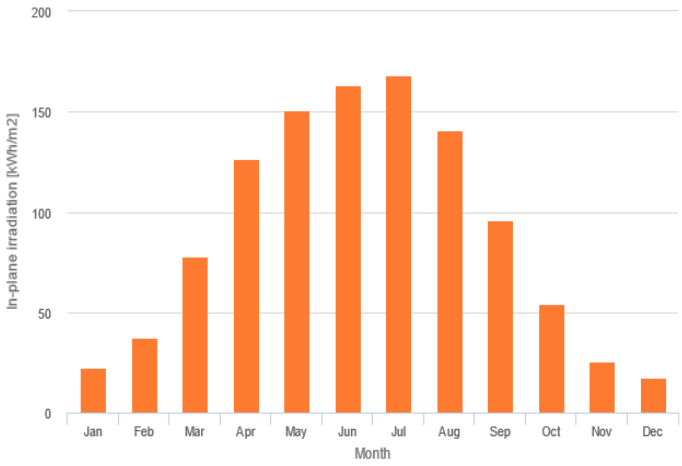
Outline of horizon at chosen location:



Monthly energy output from fix-angle PV system:



Monthly in-plane irradiation for fixed-angle:



Monthly PV energy and solar irradiation

Month	E_m	H(i)_m	SD_m
January	300.6	22.1	33.2
February	540.7	37.1	93.9
March	1170.0	78.1	155.9
April	1868.8	126.6	197.1
May	2193.3	150.6	302.8
June	2332.6	163.3	209.4
July	2364.0	168.4	230.1
August	1982.1	140.6	159.1
September	1376.8	95.8	117.8
October	765.6	54.0	91.5
November	336.3	25.3	36.1
December	222.9	17.5	22.2

E_m: Average monthly electricity production from the defined system [kWh].

H(i)_m: Average monthly sum of global irradiation per square meter received by the modules of the given system [kWh/m²].

SD_m: Standard deviation of the monthly electricity production due to year-to-year variation [kWh].

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