Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

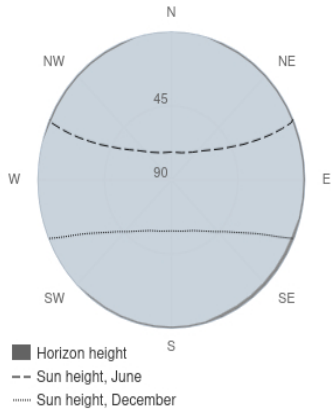
Provided inputs:

Latitude/Longitude:	7.067,-73.853
Horizon:	Calculated
Database used:	PVGIS-ERA5
PV technology:	Cryst Sil Original
PV installed:	5200 kWp
System loss:	14 %

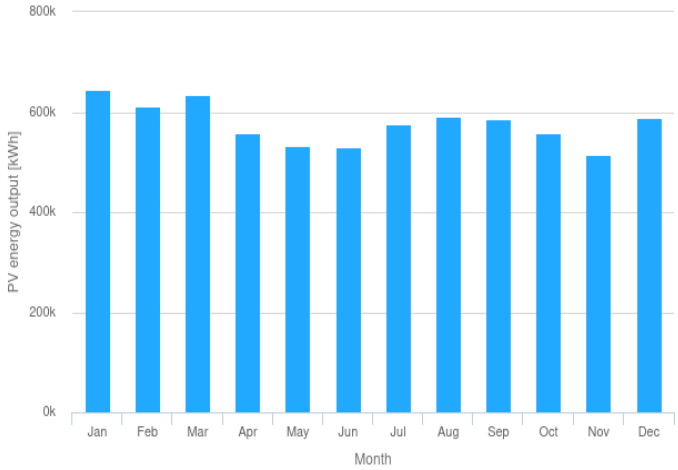
Simulation outputs

Slope angle:	9 (opt) °
Azimuth angle:	15 (opt) °
Yearly PV energy production:	6925915.8 kWh
Yearly in-plane irradiation:	1887.33 kWh/m²
Year-to-year variability:	302807.13 kWh
Changes in output due to:	
Angle of incidence:	-2.7 %
Spectral effects:	NaN %
Temperature and low irradiance:	-15.66 %
Total loss:	-29.43 %

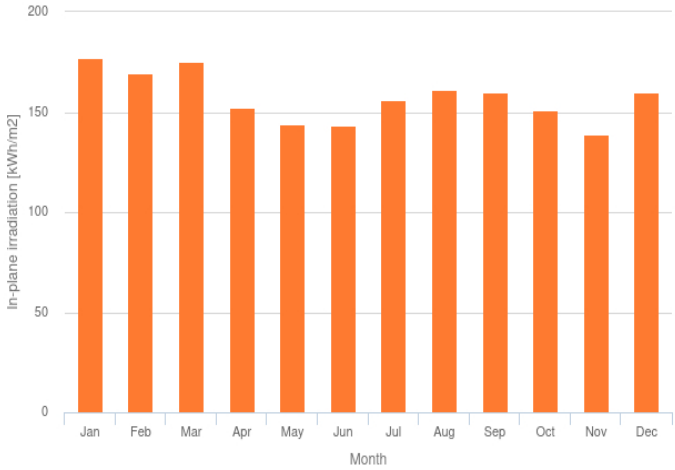
Outline of horizon at chosen location:



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	645559.6	177.2	39198.5
February	610319.7	169.2	36597.8
March	635542.4	175.0	39305.7
April	557474.2	151.9	40809.8
May	532706.8	144.1	28463.8
June	530091.3	143.5	27722.3
July	574870.3	156.3	35427.8
August	591004.6	160.9	36758.7
September	586023.2	159.8	22584.9
October	558284.7	150.9	28243.4
November	515417.0	138.6	46997.5
December	588621.9	159.8	64076.4

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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