Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

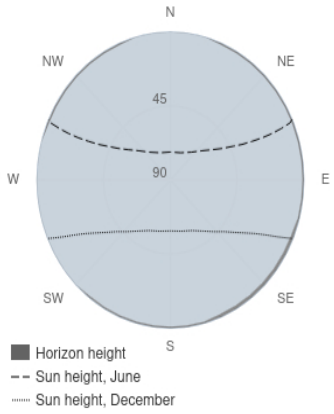
Provided inputs:

Latitude/Longitude:	7.067,-73.853
Horizon:	Calculated
Database used:	PVGIS-ERA5
PV technology:	Cryst Sil Original
PV installed:	2600 kWp
System loss:	14 %

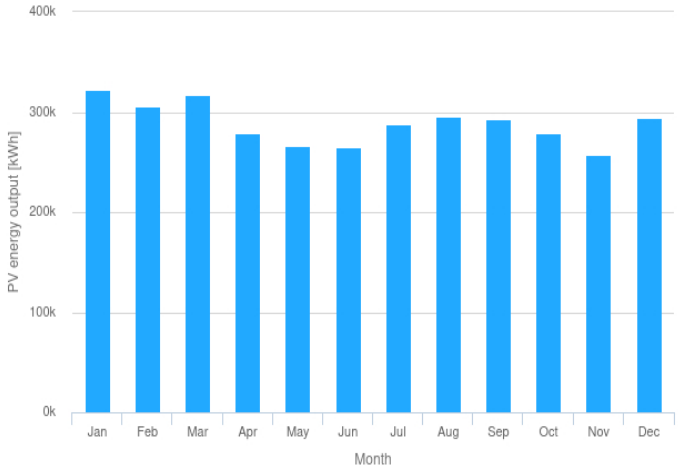
Simulation outputs

Slope angle:	9 (opt) °
Azimuth angle:	15 (opt) °
Yearly PV energy production:	3462957.9 kWh
Yearly in-plane irradiation:	1887.33 kWh/m²
Year-to-year variability:	151403.57 kWh
Changes in output due to:	
Angle of incidence:	-2.7 %
Spectral effects:	NaN %
Temperature and low irradiance:	-15.66 %
Total loss:	-29.43 %

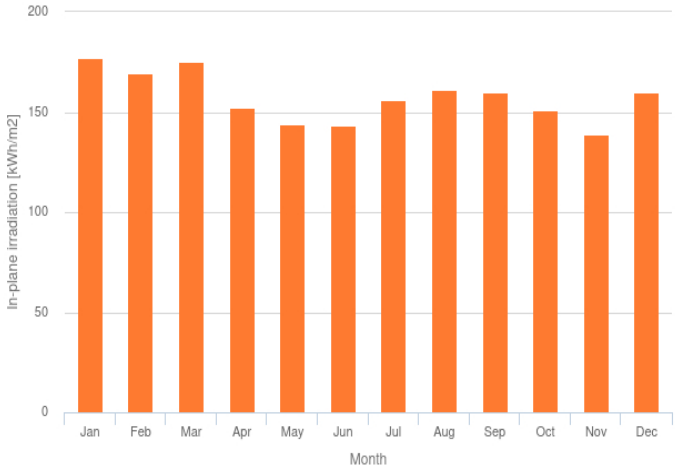
Outline of horizon at chosen location:



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	322779.8	177.2	19599.3
February	305159.9	169.2	18298.9
March	317771.2	175.0	19652.8
April	278737.1	151.9	20404.9
May	266353.4	144.1	14231.9
June	265045.7	143.5	13861.1
July	287435.1	156.3	17713.9
August	295502.3	160.9	18379.4
September	293011.6	159.8	11292.4
October	279142.4	150.9	14121.7
November	257708.5	138.6	23498.7
December	294311.0	159.8	32038.2

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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