Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

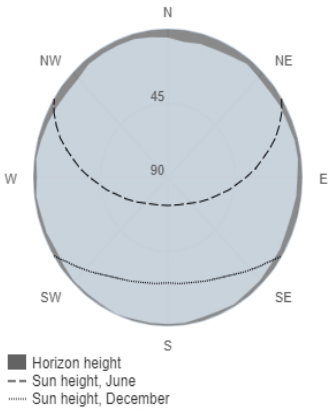
Provided inputs:

Latitude/Longitude:	40.276, 21.906
Horizon:	Calculated
Database used:	PVGIS-SARAH
PV technology:	Crystalline silicon
PV installed:	1000 kWp
System loss:	14 %

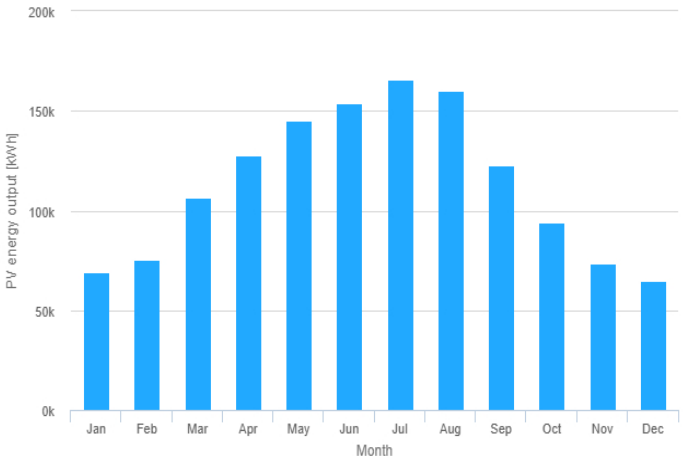
Simulation outputs

Slope angle:	20 °
Azimuth angle:	0 °
Yearly PV energy production:	1357948.83 kWh
Yearly in-plane irradiation:	1767.05 kWh/m²
Year-to-year variability:	49396.04 kWh
Changes in output due to:	
Angle of incidence:	-2.84 %
Spectral effects:	0.68 %
Temperature and low irradiance:	-8.65 %
Total loss:	-23.15 %

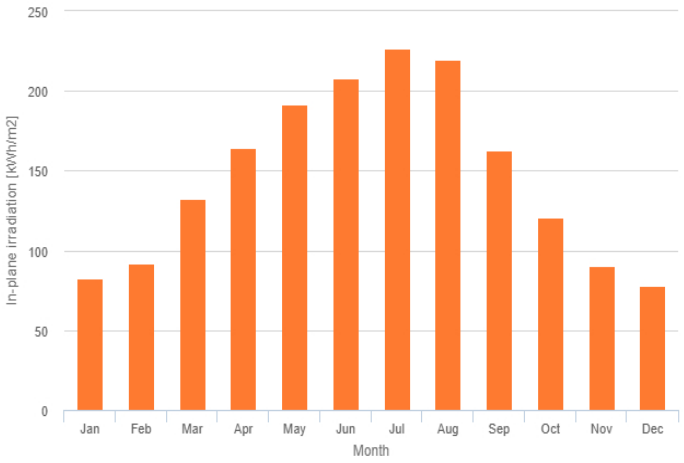
Outline of horizon at chosen location:



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	68888.7	82.5	12251.5
February	75451.9	91.6	11345.3
March	106261.9	132.4	12691.6
April	127602.0	163.9	12923.1
May	144958.1	191.4	9591.9
June	154043.2	207.9	8522.1
July	165505.2	226.7	9027.8
August	160368.2	219.3	7363.9
September	122587.8	162.6	10589.8
October	94233.9	120.5	12574.0
November	73521.0	90.5	12199.5
December	64526.0	77.7	10820.4

E_m: Average monthly electricity production from the given 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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