Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

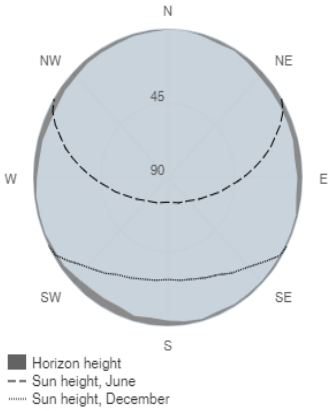
Provided inputs:

Latitude/Longitude:	38.397,24.116
Horizon:	Calculated
Database used:	PVGIS-SARAH2
PV technology:	Crystalline silicon
PV installed:	1000 kWp
System loss:	14 %

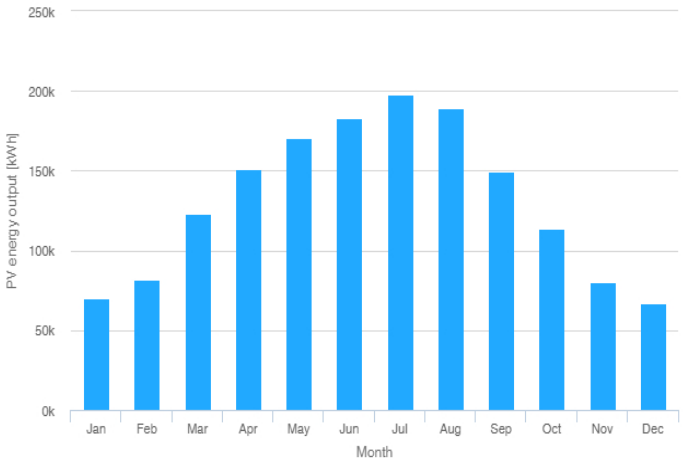
Simulation outputs

Slope angle:	20 °
Azimuth angle:	0 °
Yearly PV energy production:	1577515.01 kWh
Yearly in-plane irradiation:	1911.59 kWh/m²
Year-to-year variability:	37051.02 kWh
Changes in output due to:	
Angle of incidence:	-2.83 %
Spectral effects:	0.58 %
Temperature and low irradiance:	-1.82 %
Total loss:	-17.48 %

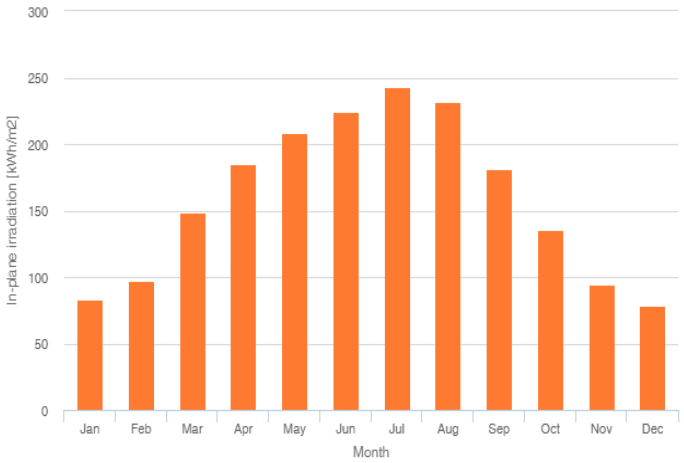
Outline of horizon at chosen location:



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	70384.7	83.3	12307.2
February	81649.6	97.5	10755.7
March	123060.4	148.5	13054.8
April	151096.1	184.6	14570.9
May	170175.2	208.4	9245.7
June	182941.4	224.8	8887.6
July	197749.5	242.9	5890.1
August	189444.2	231.6	5004.8
September	149887.1	180.9	9358.7
October	113831.4	135.9	14565.3
November	80245.3	94.2	12078.2
December	67048.9	78.9	8478.6

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].

Report generated on 2022/09/01