

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

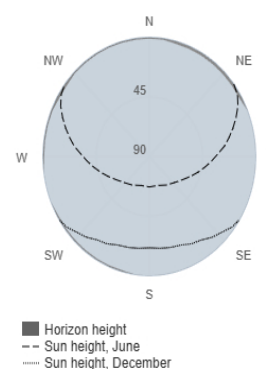
Provided inputs:

Latitude/Longitude: XXXXXXXXXX
Horizon: Calculated
Database used: PVGIS-SARAH3
PV technology: Cryst Sil Original
PV installed: 28.38 kWp
System loss: 12 %

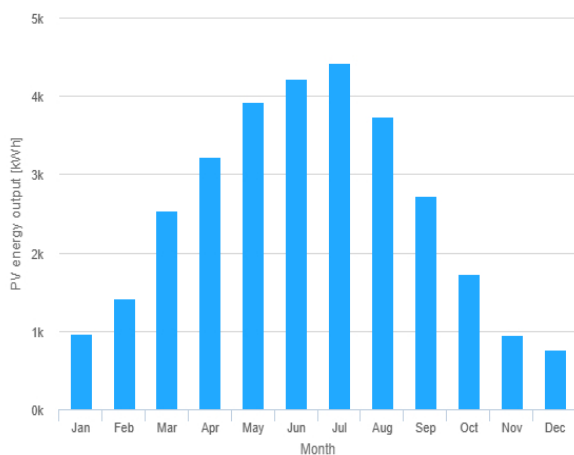
Simulation outputs

Slope angle: 8 °
Azimuth angle: -105 °
Yearly PV energy production: 30608.04 kWh
Yearly in-plane irradiation: 1430.41 kWh/m²
Year-to-year variability: 1013.97 kWh
Changes in output due to:
Angle of incidence: -4.17 %
Spectral effects: 0.91 %
Temperature and low irradiance: -11.41 %
Total loss: -24.6 %

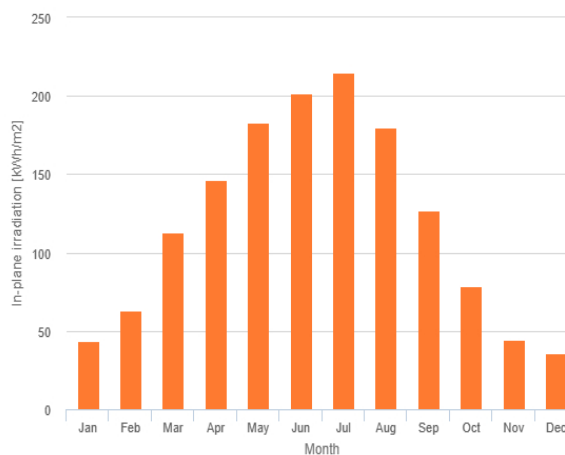
Outline of horizon at chosen location:



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	958.6	43.9	141.5
February	1419.8	63.0	205.5
March	2540.6	112.6	290.3
April	3223.8	146.3	381.1
May	3924.6	183.0	313.1
June	4215.9	202.0	254.8
July	4427.7	214.7	242.1
August	3742.2	179.5	206.1
September	2720.2	126.8	148.3
October	1726.8	78.4	216.5
November	946.6	44.0	163.9
December	761.3	36.2	102.6

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].