

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

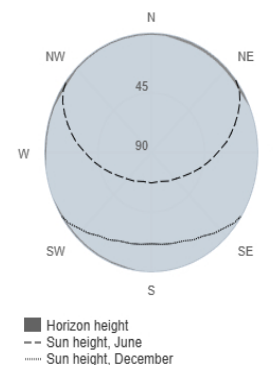
Provided inputs:

Latitude/Longitude: [REDACTED]
Horizon: Calculated
Database used: PVGIS-SARAH3
PV technology: Cryst Sil Original
PV installed: 70.95 kWp
System loss: 12 %

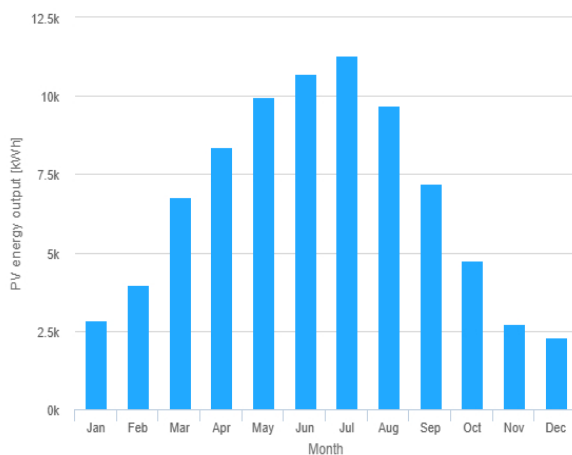
Simulation outputs

Slope angle: 8 °
Azimuth angle: 75 °
Yearly PV energy production: 80630.15 kWh
Yearly in-plane irradiation: 1505.65 kWh/m²
Year-to-year variability: 2641.55 kWh
Changes in output due to:
Angle of incidence: -3.79 %
Spectral effects: 0.95 %
Temperature and low irradiance: -11.69 %
Total loss: -24.52 %

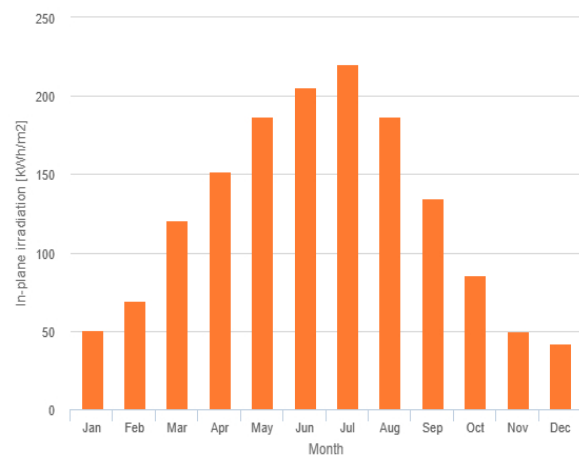
Outline of horizon at chosen location:



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	2846.8	50.8	490.7
February	3965.4	69.7	602.8
March	6793.9	120.4	782.1
April	8354.5	152.2	967.0
May	9979.1	187.0	782.8
June	10695.5	205.9	654.5
July	11305.0	220.4	616.5
August	9688.6	186.7	447.6
September	7222.0	134.9	375.8
October	4744.8	85.6	611.9
November	2730.9	49.7	497.6
December	2303.6	42.4	367.1

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].