

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

Provided inputs:

Latitude/Longitude: 52.408, 16.930
Horizon: Calculated
Database used: PVGIS-CMSAF
PV technology: Crystalline silicon
PV installed: 7.48 kWp
System loss: 14 %

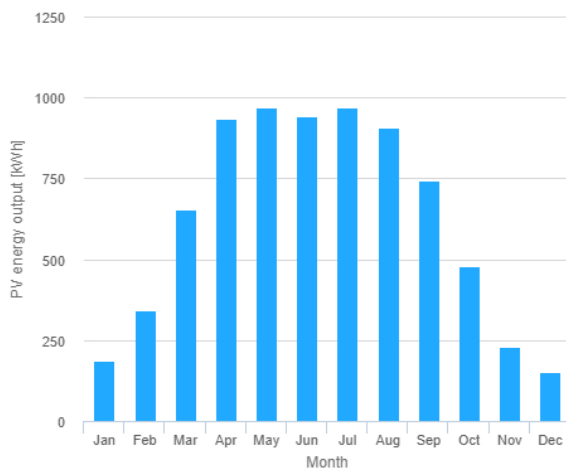
Simulation outputs

Slope angle: 35 °
Azimuth angle: 0 °
Yearly PV energy production: 7520 kWh
Yearly in-plane irradiation: 1290 kWh/m²
Year to year variability: 392.00 %
Changes in output due to:
Angle of incidence: -3.1 %
Spectral effects: 1.8 %
Temperature and low irradiance: -8.2 %
Total loss: -22.2 %

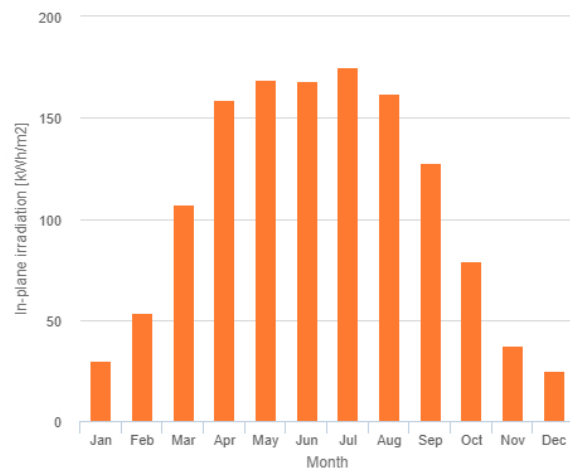
Outline of horizon at chosen location:



Monthly energy output from fix-angle PV system:



Monthly in-plane irradiation for fixed-angle:



Monthly PV energy and solar irradiation

Month	Em	Hm	SDm
January	187	29.7	27.7
February	344	53.8	104
March	656	107	118
April	936	159	135
May	969	169	132
June	944	168	77.2
July	971	175	102
August	909	162	89.2
September	743	128	93
October	478	79.1	103
November	230	37.6	75.6
December	153	25	35

Em: Average monthly electricity production from the given system [kWh].

Hm: Average monthly sum of global irradiation per square meter received by the modules of the given system [kWh/m²].

SDm: Standard deviation of the monthly electricity production due to year-to-year variation [kWh].