

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: 8.84 kWp
System loss: 14 %

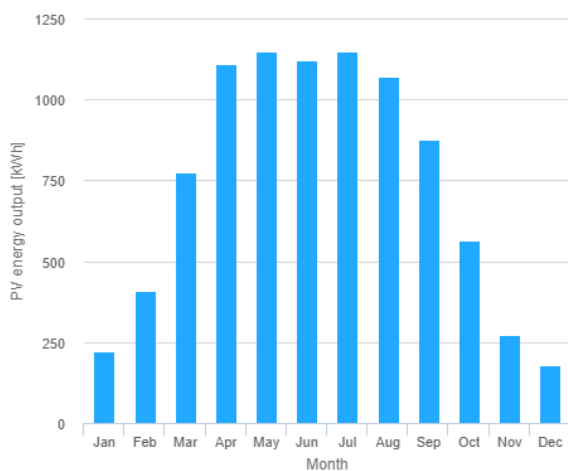
Simulation outputs

Slope angle: 35 °
Azimuth angle: 0 °
Yearly PV energy production: 8890 kWh
Yearly in-plane irradiation: 1290 kWh/m²
Year to year variability: 464.00 %
Changes in output due to:
Angle of incidence: -3.1 %
Spectral effects: 1.8 %
Temperature and low irradiance: -8.2 %
Total loss: -22.2 %

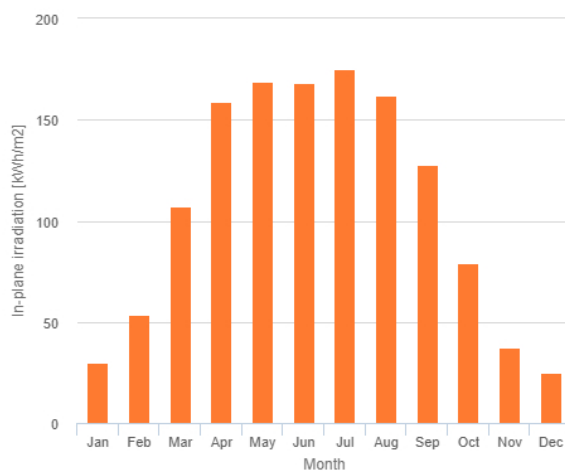
Outline of horizon at chosen location:



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	221	29.7	32.7
February	407	53.8	122
March	775	107	139
April	1110	159	160
May	1150	169	156
June	1120	168	91.3
July	1150	175	120
August	1070	162	105
September	878	128	110
October	565	79.1	122
November	272	37.6	89.4
December	181	25	41.3

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].