

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: 7.82 kWp
System loss: 14 %

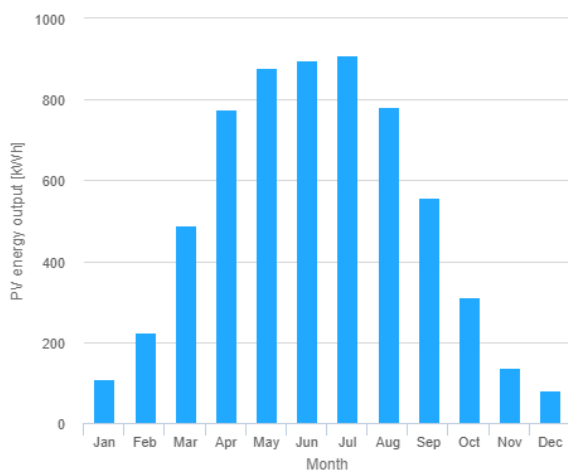
Simulation outputs

Slope angle: 35 °
Azimuth angle: 90 °
Yearly PV energy production: 6150 kWh
Yearly in-plane irradiation: 1030 kWh/m²
Year to year variability: 267.00 %
Changes in output due to:
Angle of incidence: -3.9 %
Spectral effects: 1.6 %
Temperature and low irradiance: -8.7 %
Total loss: -23.3 %

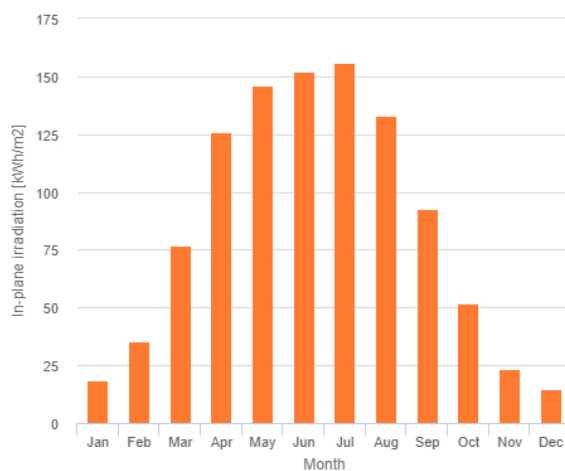
Outline of horizon at chosen location:



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	108	18.4	11.5
February	224	35.2	48.6
March	488	76.9	65.8
April	776	126	111
May	879	146	101
June	897	152	61.3
July	909	156	84.3
August	782	133	64.4
September	559	92.7	61.5
October	313	51.6	51.7
November	137	23.4	32.9
December	81.2	14.7	13

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].