

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: 5.78 kWp
System loss: 14 %

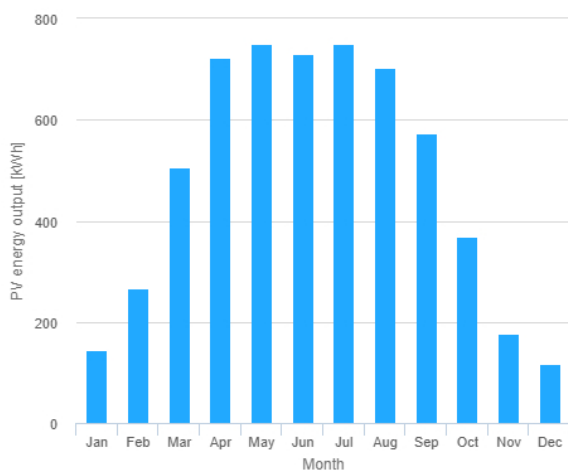
Simulation outputs

Slope angle: 35 °
Azimuth angle: 0 °
Yearly PV energy production: 5810 kWh
Yearly in-plane irradiation: 1290 kWh/m²
Year to year variability: 303.00 %
Changes in output due to:
Angle of incidence: -3.1 %
Spectral effects: 1.8 %
Temperature and low irradiance: -8.2 %
Total loss: -22.2 %

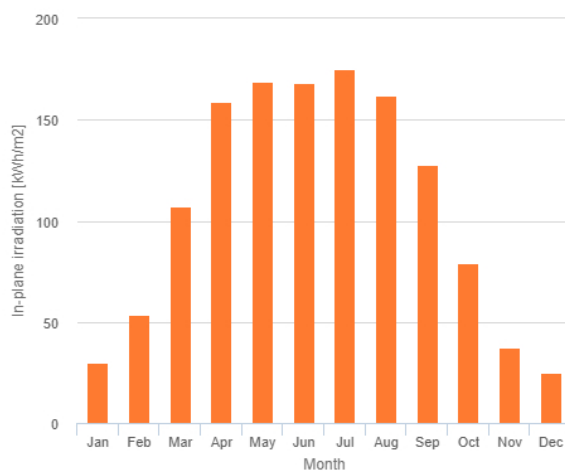
Outline of horizon at chosen location:



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	145	29.7	21.4
February	266	53.8	80
March	507	107	91
April	723	159	105
May	749	169	102
June	729	168	59.7
July	750	175	78.7
August	703	162	68.9
September	574	128	71.9
October	369	79.1	79.8
November	178	37.6	58.4
December	118	25	27

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].