

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

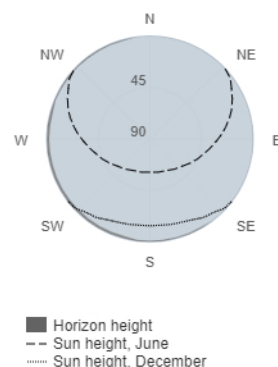
Provided inputs:

Latitude/Longitude: 52.408, 16.930
Horizon: Calculated
Database used: PVGIS-CMSAF
PV technology: Crystalline silicon
PV installed: 9.18 kWp
System loss: 14 %

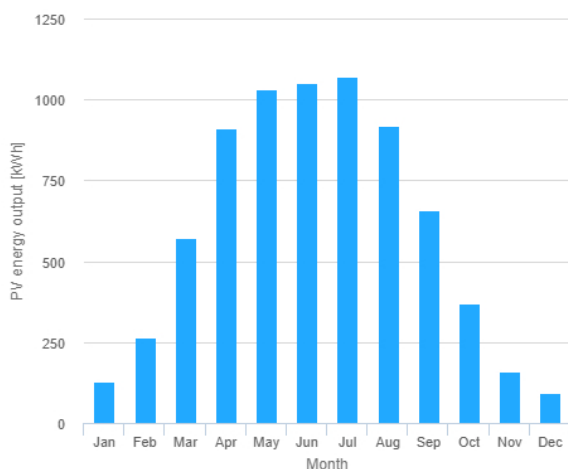
Simulation outputs

Slope angle: 35 °
Azimuth angle: 90 °
Yearly PV energy production: 7230 kWh
Yearly in-plane irradiation: 1030 kWh/m²
Year to year variability: 313.00 %
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 PV energy and solar irradiation

Month	Em	Hm	SDm
January	127	18.4	13.5
February	263	35.2	57
March	573	76.9	77.2
April	911	126	130
May	1030	146	119
June	1050	152	72
July	1070	156	99
August	919	133	75.6
September	657	92.7	72.2
October	368	51.6	60.7
November	161	23.4	38.6
December	95.3	14.7	15.2

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].

Monthly in-plane irradiation for fixed-angle:

