

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

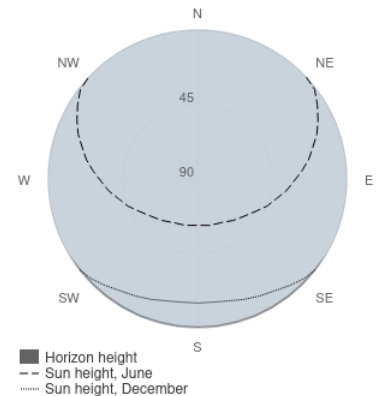
Provided inputs:

Latitude/Longitude: 51.067,3.694
Horizon: Calculated
Database used: PVGIS-SARAH2
PV technology: Crystalline silicon
PV installed: 4 kWp
System loss: 14 %

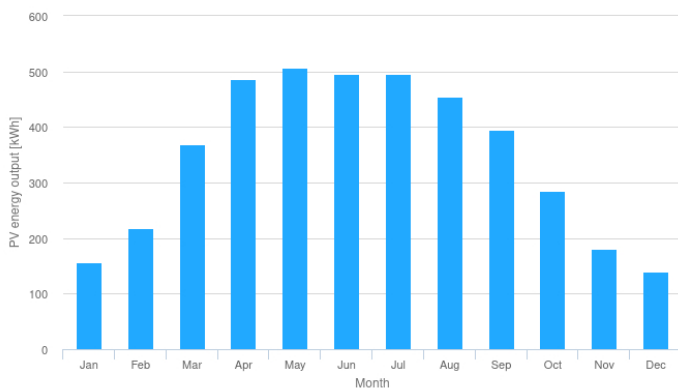
Simulation outputs

Slope angle: 35 °
Azimuth angle: 0 °
Yearly PV energy production: 4184.43 kWh
Yearly in-plane irradiation: 1302.61 kWh/m²
Year-to-year variability: 193.36 kWh
Changes in output due to:
Angle of incidence: -3.08 %
Spectral effects: 1.78 %
Temperature and low irradiance: -5.33 %
Total loss: -19.69 %

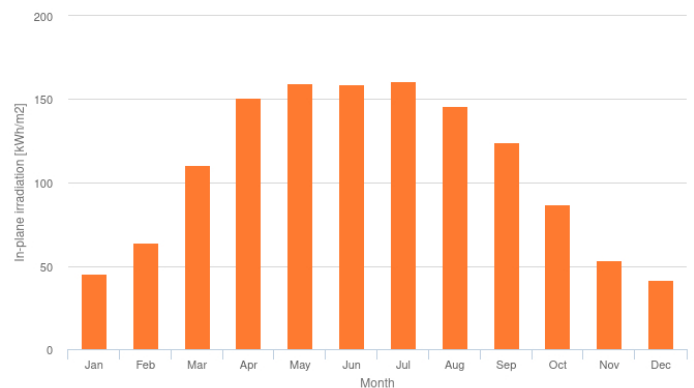
Outline of horizon at chosen location:



Monthly energy output from fix-angle PV system:



Monthly in-plane irradiation for fixed-angle:



Monthly PV energy and solar irradiation

Month	E_m	H(i)_m	SD_m
January	156.3	45.6	25.1
February	217.7	64.0	71.2
March	369.2	110.8	60.4
April	486.6	150.9	76.2
May	507.6	159.5	66.7
June	496.0	158.7	59.4
July	495.4	160.8	64.0
August	455.2	146.1	46.0
September	396.0	124.5	29.6
October	284.2	86.7	37.3
November	180.1	53.7	30.0
December	140.1	41.4	32.8

E_m: Average monthly electricity production from the defined system [kWh].

H(i)_m: Average monthly sum of global irradiation per square meter received by the modules of the given system [kWh/m²].

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