

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

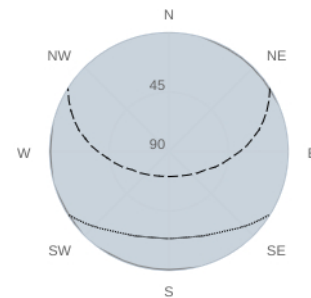
Provided inputs:

Latitude/Longitude: 41.651, -0.883
 Horizon: Calculated
 Database used: PVGIS-SARAH
 PV technology: Crystalline silicon
 PV installed: 1.2 kWp
 System loss: 14 %

Simulation outputs

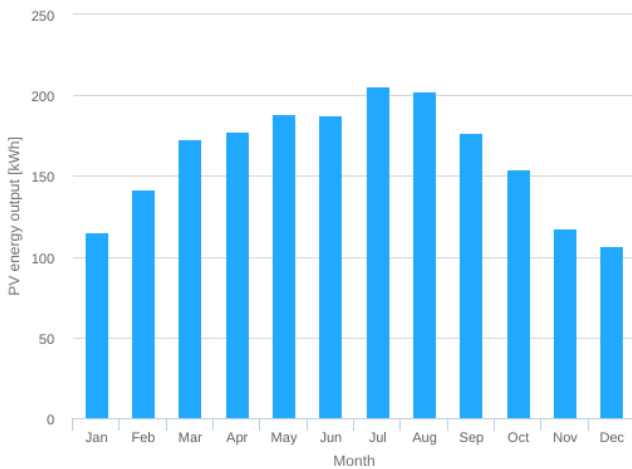
Slope angle: 35 °
 Azimuth angle: 0 °
 Yearly PV energy production: 1946.96 kWh
 Yearly in-plane irradiation: 2056.23 kWh/m²
 Year to year variability: 71.73 kWh
 Changes in output due to:
 Angle of incidence: -2.54 %
 Spectral effects: 0.73 %
 Temperature and low irradiance: -6.54 %
 Total loss: -21.1 %

Outline of horizon at chosen location:

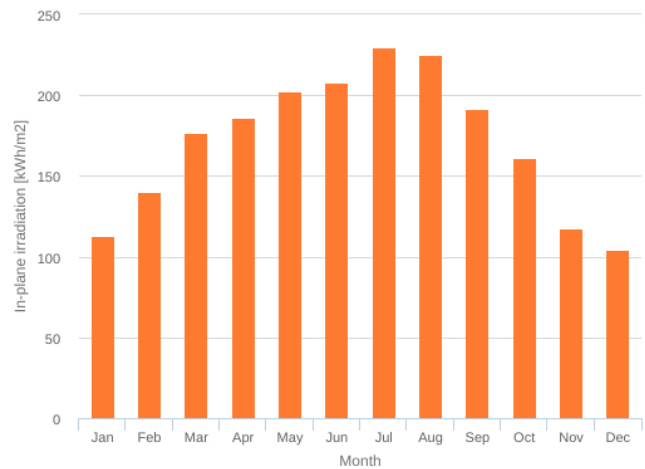


■ Horizon height
 - - Sun height, June
 Sun height, December

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	115.2	112.8	16.9
February	141.4	140.0	18.0
March	173.2	176.7	17.8
April	177.3	186.4	13.8
May	188.6	202.7	12.3
June	187.7	207.9	5.3
July	205.5	230.1	5.8
August	202.4	224.9	3.3
September	177.0	191.5	9.6
October	154.1	161.0	13.1
November	117.8	117.8	18.7
December	106.8	104.6	20.3

E_m: Average monthly electricity production from the given 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].