

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

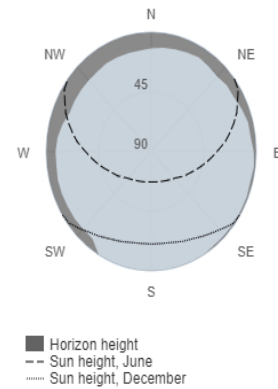
Provided inputs:

Latitude/Longitude: 46.119,14.837
 Horizon: Calculated
 Database used: PVGIS-SARAH2
 PV technology: Crystalline silicon
 PV installed: 2.25 kWp
 System loss: 14 %

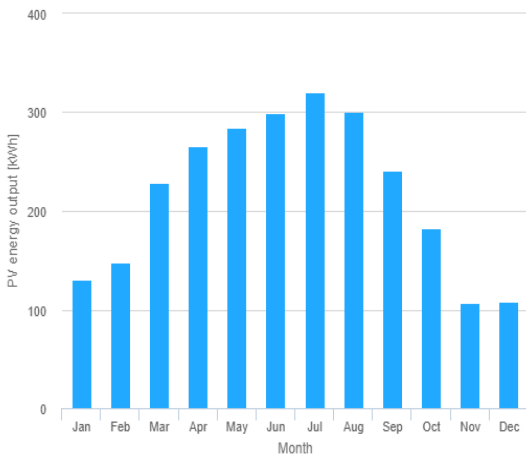
Simulation outputs

Slope angle: 35 °
 Azimuth angle: 0 °
 Yearly PV energy production: 2613.31 kWh
 Yearly in-plane irradiation: 1472.55 kWh/m²
 Year-to-year variability: 158.37 kWh
 Changes in output due to:
 Angle of incidence: -2.81 %
 Spectral effects: 1.42 %
 Temperature and low irradiance: -6.95 %
 Total loss: -21.13 %

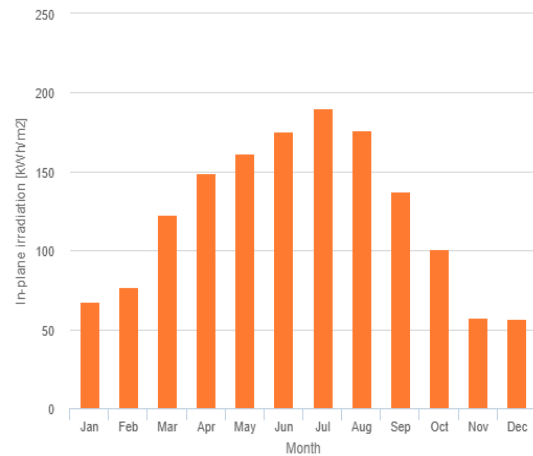
Outline of horizon at chosen location:



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	130.0	67.4	40.8
February	147.3	77.1	46.2
March	228.4	123.0	46.7
April	265.9	149.1	42.5
May	284.0	161.9	38.1
June	299.3	175.2	22.1
July	320.4	190.5	23.0
August	300.1	176.6	37.6
September	240.4	137.2	37.7
October	182.7	100.6	32.1
November	107.0	57.4	29.0
December	108.0	56.7	29.4

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].