

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

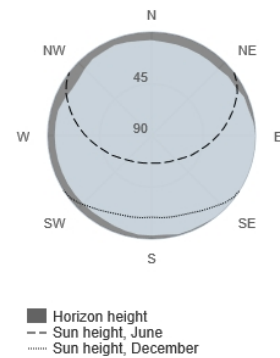
Provided inputs:

Latitude/Longitude: 47.399, 15.949
 Horizon: Calculated
 Database used: PVGIS-SARAH
 PV technology: Crystalline silicon
 PV installed: 29.8 kWp
 System loss: 5 %

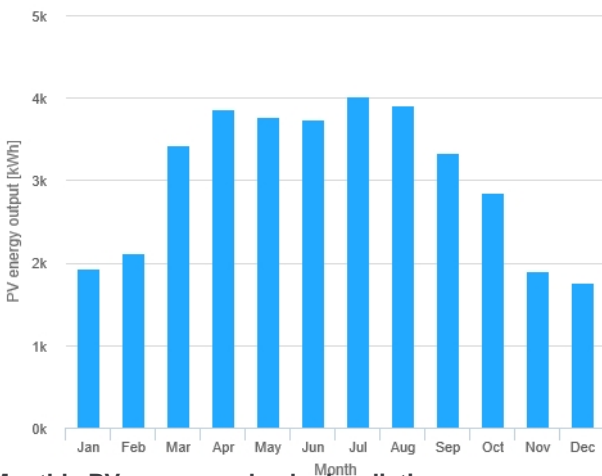
Simulation outputs

Slope angle: 45 °
 Azimuth angle: 20 °
 Yearly PV energy production: 36644.11 kWh
 Yearly in-plane irradiation: 1383.74 kWh/m²
 Year to year variability: 2264.43 kWh
 Changes in output due to:
 Angle of incidence: -2.97 %
 Spectral effects: 1.54 %
 Temperature and low irradiance: -5.06 %
 Total loss: -11.13 %

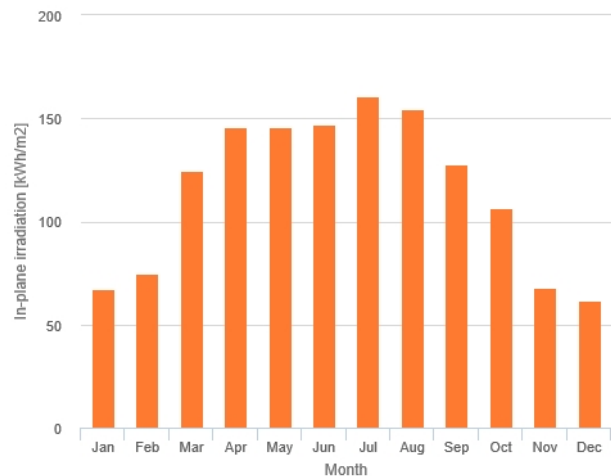
Outline of horizon at chosen location:



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	1938.6	67.2	592.9
February	2122.3	74.5	553.9
March	3424.2	124.5	530.9
April	3858.2	145.8	501.7
May	3776.3	145.7	515.0
June	3740.2	147.3	267.8
July	4022.6	160.4	323.5
August	3916.2	154.6	477.8
September	3335.1	127.6	423.6
October	2856.1	106.3	446.0
November	1894.5	68.0	415.9
December	1759.8	61.7	445.4

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].