

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

Provided inputs:

System loss:

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

14 %

Simulation outputs

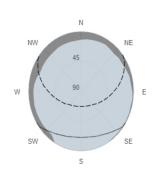
Slope angle: 35 °
Azimuth angle: 0 °
Yearly PV energy production: 2613

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:

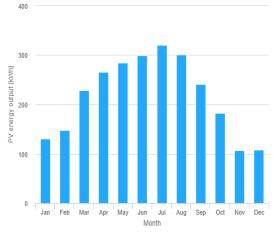
Angle of incidence: -2.81 %
Spectral effects: 1.42 %
Temperature and low irradiance: -6.95 %
Total loss: -21.13 %

Outline of horizon at chosen location:

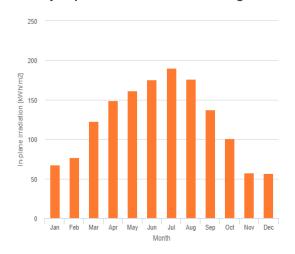


Horizon height
-- Sun height, June
--- Sun height, December

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_n
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	20.4

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].

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