

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

Provided inputs:

Latitude/Longitude: 43.972, 1.390
Horizon: Calculated
Database used: PVGIS-SARAH
PV technology: Crystalline silicon

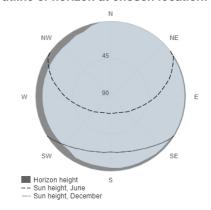
PV installed: 3 kWp System loss: 2 %

Simulation outputs

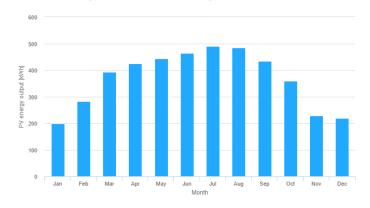
Slope angle: 36 (opt) °
Azimuth angle: 0 (opt) °
Yearly PV energy production: 4420 kWh
Yearly in-plane irradiation: 1640 kWh/m²
Year to year variability: 173.00 %
Changes in output due to:

Angle of incidence: -2.8 %
Spectral effects: 1.2 %
Temperature and low irradiance: -6.7 %
Total loss: -10 %

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	Em	Hm	SDm
January	199	68.7	24.6
February	283	98.7	47.2
March	393	141	56
April	425	157	61.9
May	443	166	37.6
June	463	178	48.9
July	490	191	27.1
August	485	187	28.3
September	434	164	32.1
October	358	130	37.9
November	228	80.1	42.6
December	219	75.8	45.9

Em: Average monthly electricity production from the given system [kWh].

Hm: Average monthly sum of global irradiation per square meter received by the modules of the given system [kWh/m^2].

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

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