

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

Provided inputs:

Latitude/Longitude: 43.383, 0.071
Horizon: Calculated
Database used: PVGIS-SARAH
PV technology: Crystalline silicon

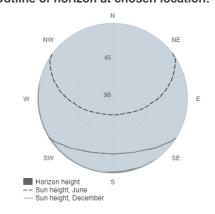
PV installed: 3 kWp System loss: 2 %

Simulation outputs

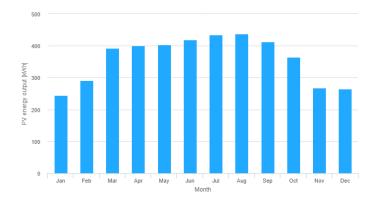
Slope angle: 38 (opt) °
Azimuth angle: -2 (opt) °
Yearly PV energy production: 4340 kWh
Yearly in-plane irradiation: 1610 kWh/m²
Year to year variability: 139.00 %
Changes in output due to:

Angle of incidence: -2.8 %
Spectral effects: 1.3 %
Temperature and low irradiance: -7.1 %
Total loss: -10.3 %

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

Em	Hm	SDm
245	85.8	36
292	103	49.1
393	143	56
401	149	49.3
403	152	44
419	161	32.8
435	169	24.1
438	169	25.8
413	157	18.2
365	134	37.4
268	94.9	52
265	92.4	43.5
	245 292 393 401 403 419 435 438 413 365 268	245 85.8 292 103 393 143 401 149 403 152 419 161 435 169 438 169 413 157 365 134 268 94.9

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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