

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

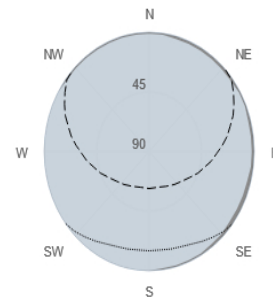
Provided inputs:

Latitude/Longitude: 50.831,-1.814
 Horizon: Calculated
 Database used: PVGIS-SARAH2
 PV technology: Crystalline silicon
 PV installed: 2580 kWp
 System loss: 14 %

Simulation outputs

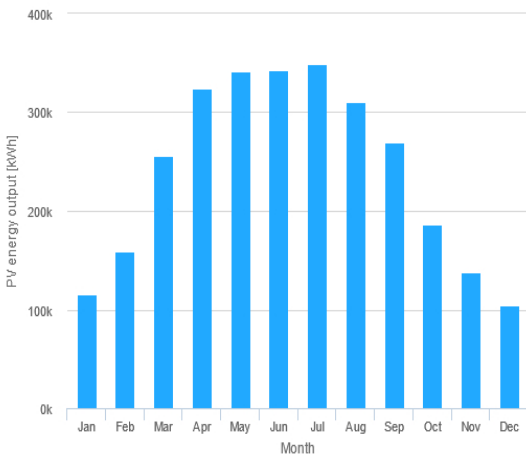
Slope angle: 40 (opt) °
 Azimuth angle: 0 (opt) °
 Yearly PV energy production: 2897589.33 kWh
 Yearly in-plane irradiation: 1377.33 kWh/m²
 Year-to-year variability: 85500.93 kWh
 Changes in output due to:
 Angle of incidence: -2.96 %
 Spectral effects: 1.68 %
 Temperature and low irradiance: -3.9 %
 Total loss: -18.46 %

Outline of horizon at chosen location:

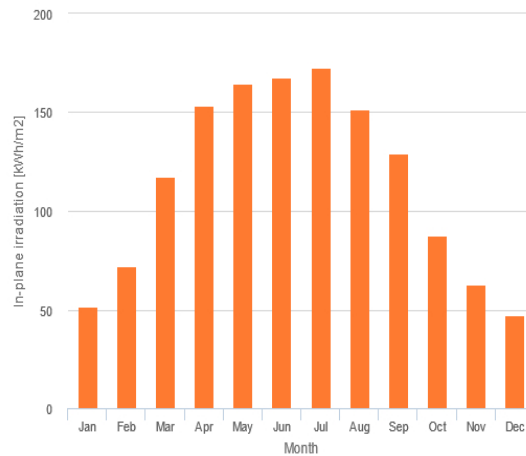


■ Horizon height
 - - Sun height, June
 - - Sun height, December

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_m
January	115397.51.8	16259.2	
February	158830.71.8	31655.5	
March	256490.817.6	43467.9	
April	324842.853.3	45944.2	
May	341623.564.5	37573.1	
June	342540.567.5	37780.3	
July	348700.772.6	36046.3	
August	310640.851.9	35010.8	
September	269566.429.2	23433.0	
October	186351.87.3	25270.5	
November	137895.62.9	23799.2	
December	104709.47.2	17776.6	

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].