

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

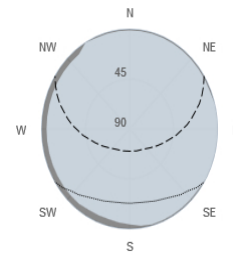
Provided inputs:

Latitude/Longitude: 42.697, 23.321
 Horizon: Calculated
 Database used: PVGIS-SARAH
 PV technology: Crystalline silicon
 PV installed: 1.26 kWp
 System loss: 14 %

Simulation outputs

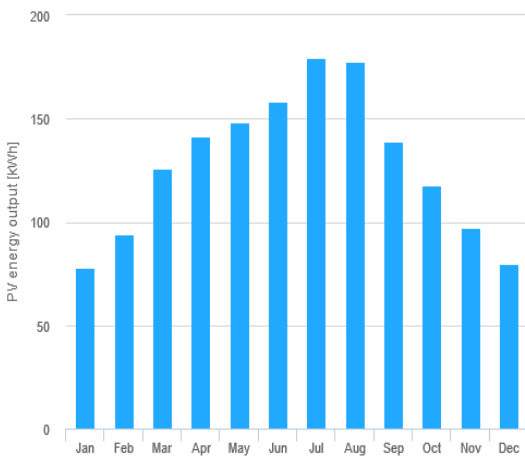
Slope angle: 35 °
 Azimuth angle: 0 °
 Yearly PV energy production: 1536.93 kWh
 Yearly in-plane irradiation: 1541.05 kWh/m²
 Year-to-year variability: 82.95 kWh
 Changes in output due to:
 Angle of incidence: -2.91 %
 Spectral effects: 1.16 %
 Temperature and low irradiance: -6.29 %
 Total loss: -20.85 %

Outline of horizon at chosen location:

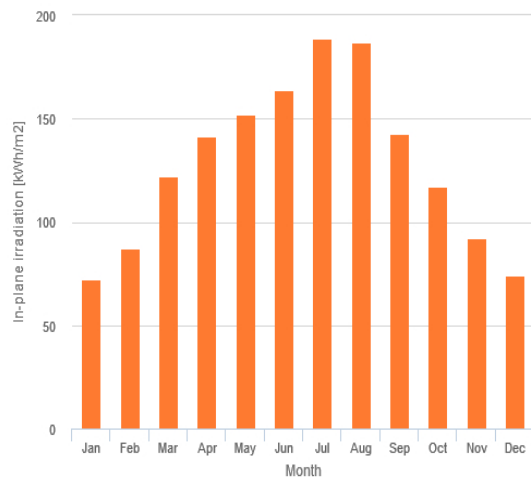


■ Horizon height
 - - Sun height, June
 — Sun height, December

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	78.1	72.2	19.3
February	93.8	87.0	17.1
March	126.2	121.9	17.4
April	141.6	141.4	24.2
May	148.2	152.1	16.3
June	158.1	164.1	18.6
July	179.5	188.9	18.5
August	177.4	187.1	16.6
September	139.3	142.8	17.4
October	118.0	116.9	21.6
November	97.0	92.5	19.0
December	79.7	74.2	22.8

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].