

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

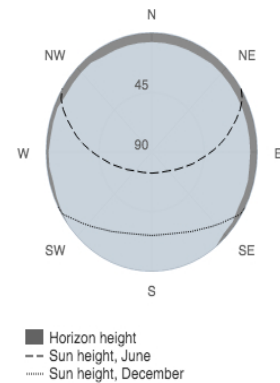
Provided inputs:

Latitude/Longitude: 38.689, 0.139
 Horizon: Calculated
 Database used: PVGIS-CMSAF
 PV technology: Unknown
 PV installed: 0.6 kWp
 System loss: 0 %

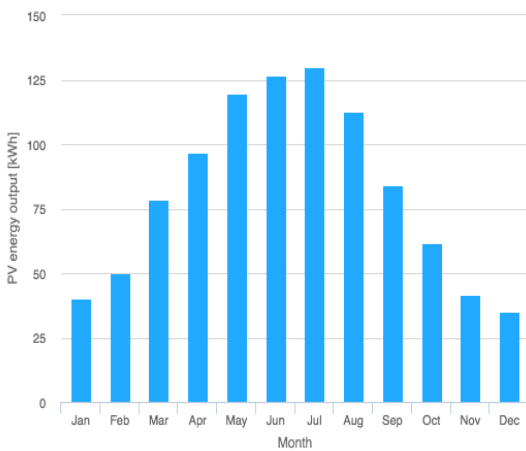
Simulation outputs

Slope angle: 0 °
 Azimuth angle: -179 °
 Yearly PV energy production: 976.59 kWh
 Yearly in-plane irradiation: 1832.49 kWh/m²
 Year-to-year variability: 20.52 kWh
 Changes in output due to:
 Angle of incidence: -3.45 %
 Spectral effects: NaN %
 Temperature and low irradiance: -8 %
 Total loss: -11.18 %
 PV electricity cost [per kWh]: 0.055 per kWh

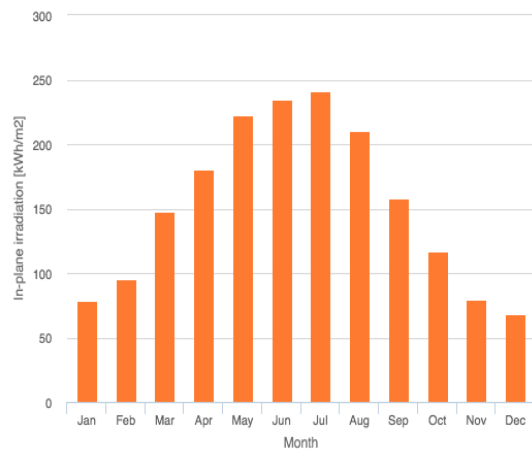
Outline of horizon at chosen location:



Monthly energy output from fix-angle PV system:



Monthly in-plane irradiation for fixed-angle:



Monthly PV energy and solar irradiation

Month	E_m	H(i)_m	SD_m
January	40.1	78.1	3.2
February	50.2	95.7	5.3
March	78.5	147.4	5.5
April	96.8	180.4	5.2
May	119.6	222.4	6.8
June	126.7	235.0	3.9
July	129.7	240.8	3.0
August	112.8	210.0	4.0
September	84.2	157.5	5.3
October	61.6	116.6	4.9
November	41.4	79.8	3.0
December	35.0	68.7	2.4

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].