Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

Provided inputs:

Latitude/Longitude:	41.325,23.799
Horizon:	Calculated
Database used:	PVGIS-SARAH2
PV technology:	Crystalline silicon
PV installed:	1000 kWp
System loss:	14 %

Simulation outputs

Slope angle:	20 °
Azimuth angle:	0 °
Yearly PV energy production:	1352020.91 kWh
Yearly in-plane irradiation:	1720.4 kWh/m²
Year-to-year variability:	53788.36 kWh
Changes in output due to:	
Angle of incidence:	-2.92 %
Spectral effects:	0.89 %
Temperature and low irradiance:	-6.7 %
Total loss:	-21.41 %

Outline of horizon at chosen location:

- Horizon height
- Sun height, June
- Sun height, December
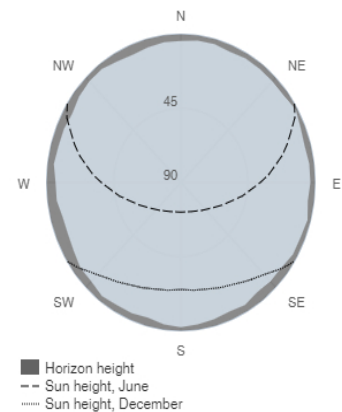
Monthly energy output from fix-angle PV system:
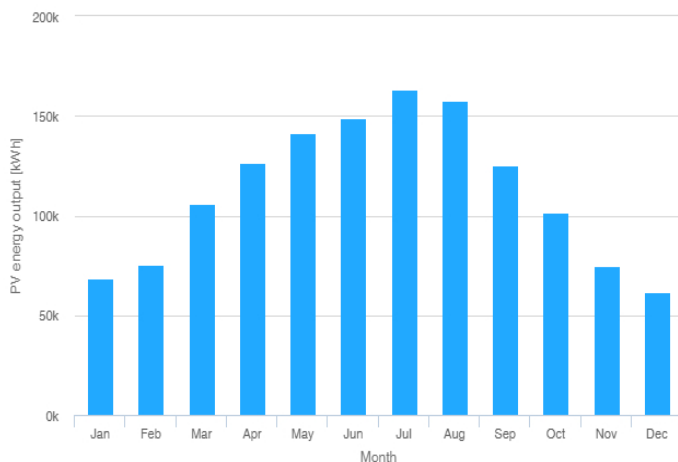
Monthly in-plane irradiation for fixed-angle:
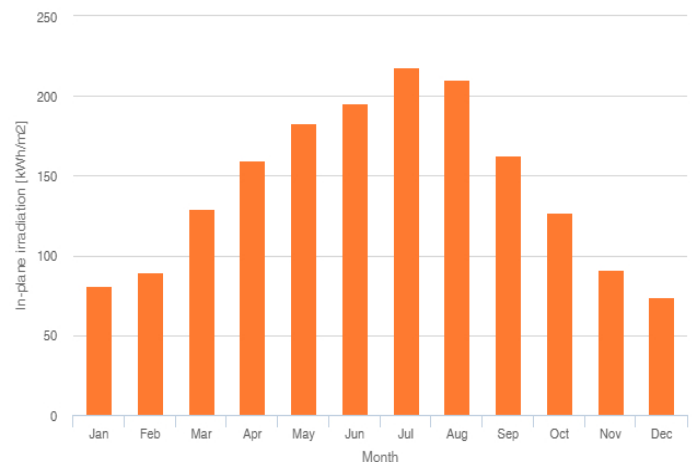
Monthly PV energy and solar irradiation

Month	E_m	H(i)_m	SD_m
January	68441.3	80.7	17692.0
February	75248.8	89.5	15355.5
March	106228.2	129.5	14009.3
April	126747.5	159.3	13936.5
May	141713.6	182.9	11236.3
June	149048.8	195.8	11303.7
July	163440.9	218.0	8244.8
August	157415.9	210.2	9211.8
September	125451.3	162.6	10267.2
October	101372.2	127.2	15211.0
November	75036.2	90.8	12928.7
December	61876.2	74.0	15560.5

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].

Joint Research Centre

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