Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

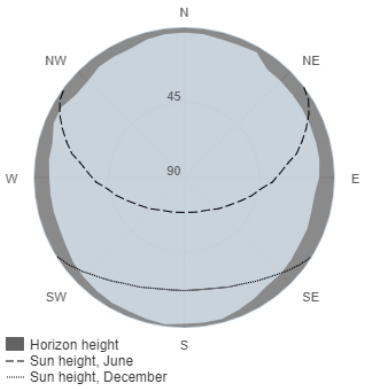
Provided inputs:

Latitude/Longitude:	44.539, 6.091
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	3 kWp
System loss:	10 %

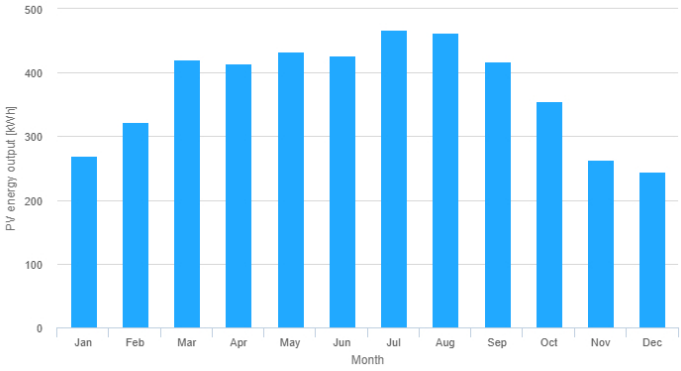
Simulation outputs

Slope angle:	45 °
Azimuth angle:	0 °
Yearly PV energy production:	4500 kWh
Yearly in-plane irradiation:	1880 kWh/m²
Year to year variability:	150.00 %
Changes in output due to:	
Angle of incidence:	-2.5 %
Spectral effects:	0.8 %
Temperature and low irradiance:	-10 %
Total loss:	-20.4 %

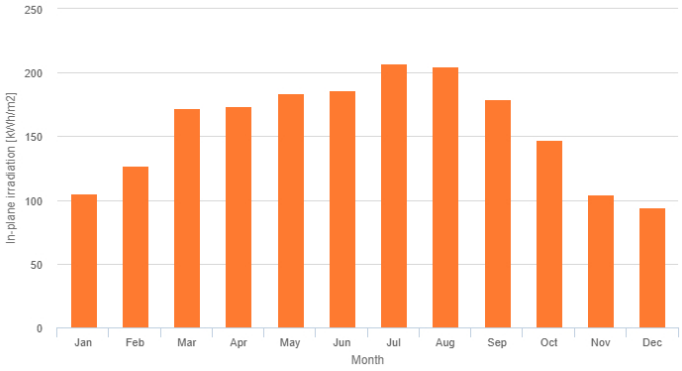
Outline of horizon at chosen location:



Monthly energy output from fix-angle PV system:



Monthly in-plane irradiation for fixed-angle:



Monthly PV energy and solar irradiation

Month	Em	Hm	SDm
January	270	105	20.9
February	322	127	66.6
March	421	172	38.8
April	414	174	37.5
May	433	184	22.4
June	427	186	17.4
July	468	207	26.8
August	462	205	21.4
September	417	179	22.7
October	355	147	34.1
November	264	104	43
December	245	94.2	36.4

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/m²].

SDm: Standard deviation of the monthly electricity production due to year-to-year variation [kWh].

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