Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

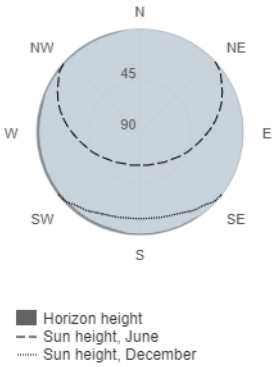
Provided inputs:

Latitude/Longitude:	52.408, 16.930
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	8.16 kWp
System loss:	14 %

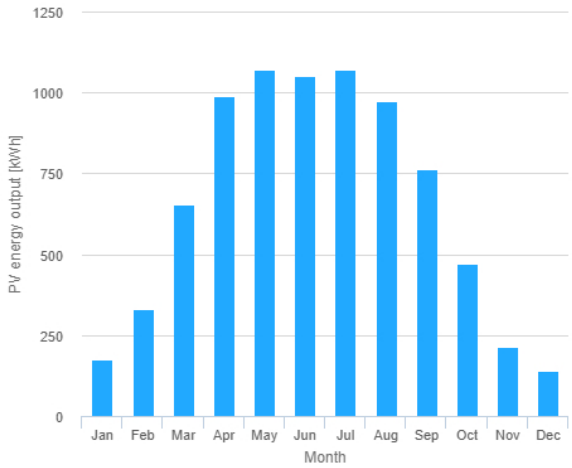
Simulation outputs

Slope angle:	35 °
Azimuth angle:	-45 °
Yearly PV energy production:	7900 kWh
Yearly in-plane irradiation:	1240 kWh/m²
Year to year variability:	361.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.7 %
Temperature and low irradiance:	-8.1 %
Total loss:	-22.1 %

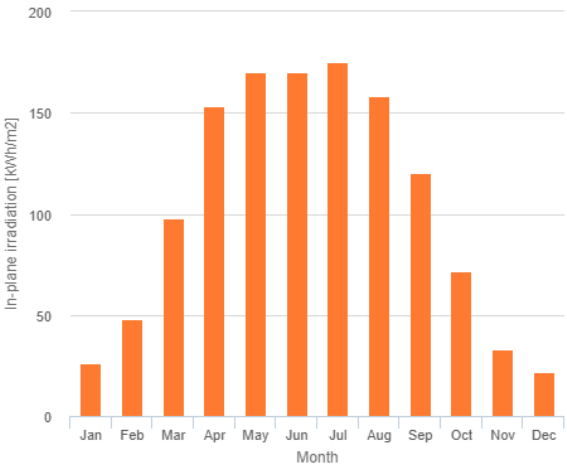
Outline of horizon at chosen location:



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	174	25.9	23.8
February	332	48	93.8
March	656	97.8	105
April	989	153	129
May	1070	170	147
June	1050	170	94.5
July	1070	175	123
August	974	158	86.6
September	764	120	85.9
October	470	71.6	97.4
November	216	33	66
December	140	21.7	30.3

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].

Joint Research Centre

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