Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

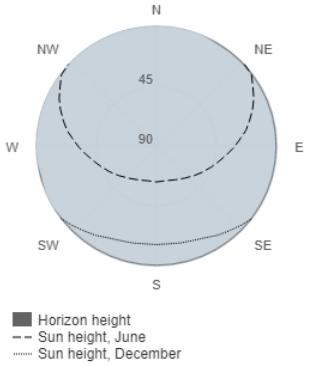
Provided inputs:

Latitude/Longitude:	50.261, 19.013
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	3 kWp
System loss:	14 %

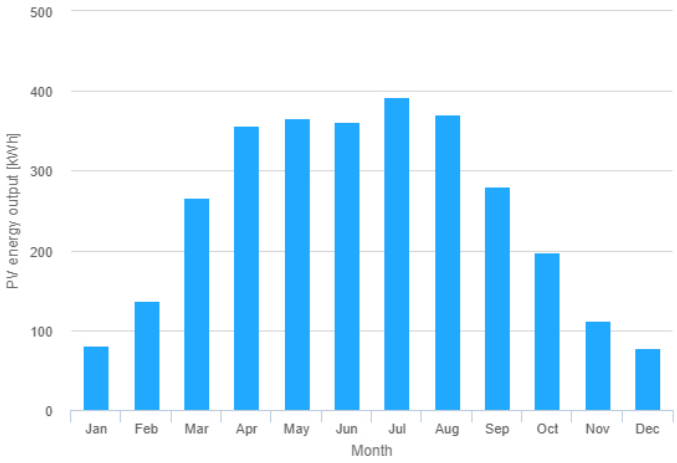
Simulation outputs

Slope angle:	35 °
Azimuth angle:	0 °
Yearly PV energy production:	3000 kWh
Yearly in-plane irradiation:	1250 kWh/m²
Year to year variability:	167.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.6 %
Temperature and low irradiance:	-5.7 %
Total loss:	-20.1 %

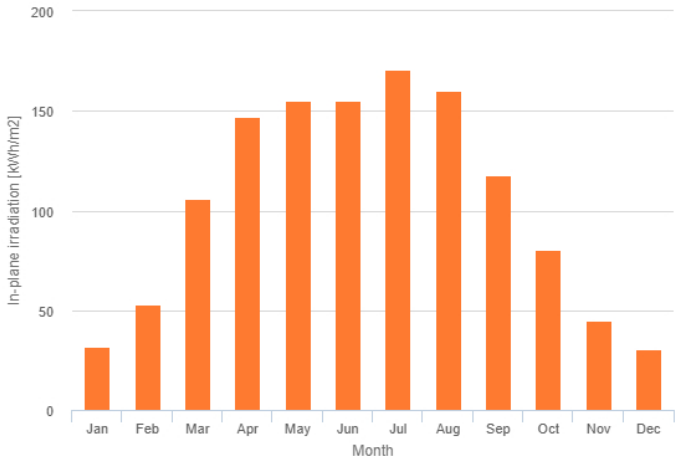
Outline of horizon at chosen location:



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	81	31.8	13.7
February	137	52.9	41.3
March	266	106	48.3
April	356	147	47.2
May	366	155	65.6
June	362	155	36.1
July	392	171	38.3
August	370	160	31
September	281	118	37.2
October	198	80.2	43.4
November	112	44.9	30.3
December	77.3	30.8	13.8

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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