Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

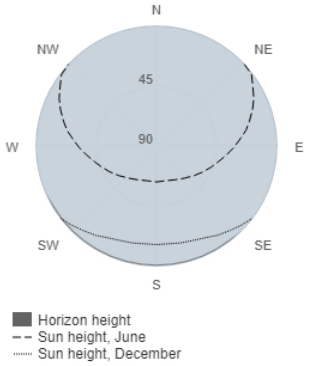
Provided inputs:

Latitude/Longitude:	50.259, 19.023
Horizon:	Calculated
Database used:	PVGIS-CMSAF
PV technology:	Crystalline silicon
PV installed:	25 kWp
System loss:	14 %

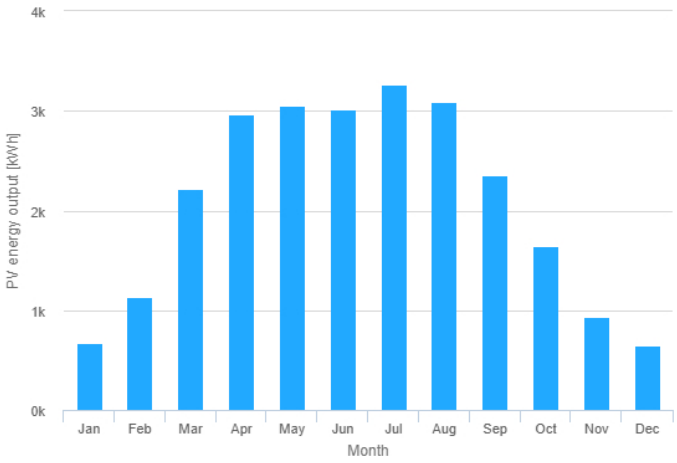
Simulation outputs

Slope angle:	35 °
Azimuth angle:	0 °
Yearly PV energy production:	25000 kWh
Yearly in-plane irradiation:	1250 kWh/m²
Year to year variability:	1390.00 %
Changes in output due to:	
Angle of incidence:	-3.1 %
Spectral effects:	1.6 %
Temperature and low irradiance:	-5.7 %
Total loss:	-20.1 %

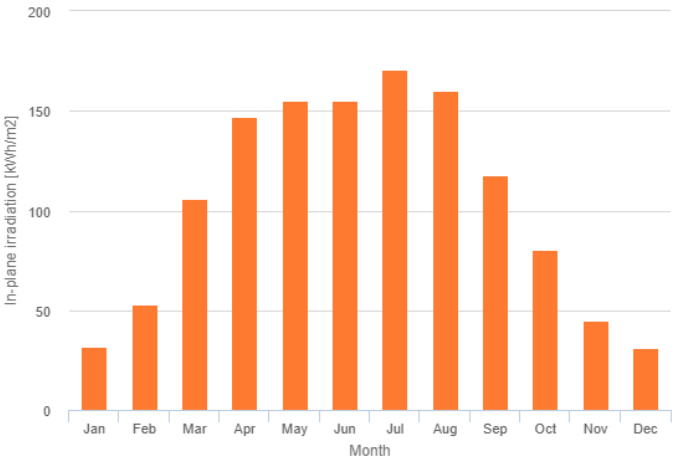
Outline of horizon at chosen location:



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	675	31.8	114
February	1140	52.9	345
March	2220	106	402
April	2970	147	393
May	3050	155	547
June	3010	155	301
July	3260	171	319
August	3090	160	259
September	2350	118	310
October	1650	80.2	361
November	937	44.9	253
December	645	30.9	115

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

Report generated on 2018/08/28