Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

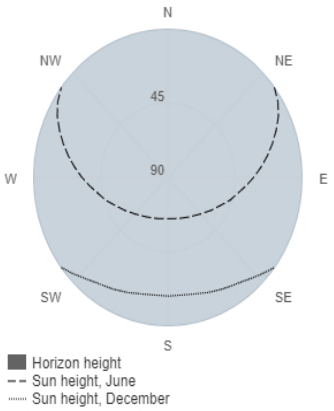
Provided inputs:

Latitude/Longitude:	47.803,22.865
Horizon:	Calculated
Database used:	PVGIS-SARAH2
PV technology:	Crystalline silicon
PV installed:	990 kWp
System loss:	14 %

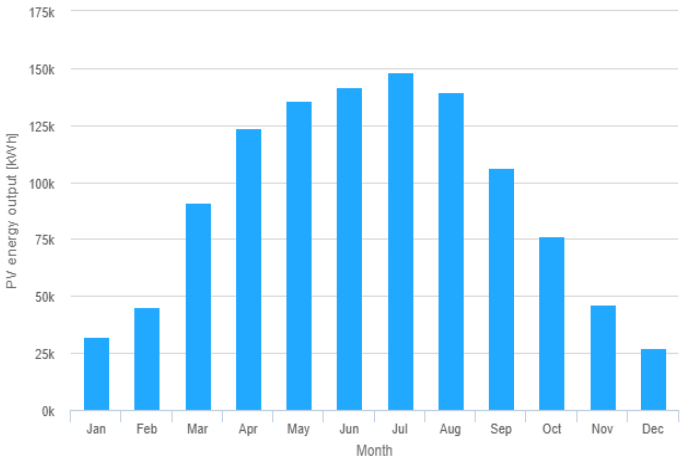
Simulation outputs

Slope angle:	15 °
Azimuth angle:	0 °
Yearly PV energy production:	1113971.97 kWh
Yearly in-plane irradiation:	1438.44 kWh/m²
Year-to-year variability:	42190.54 kWh
Changes in output due to:	
Angle of incidence:	-3.25 %
Spectral effects:	1.22 %
Temperature and low irradiance:	-7.12 %
Total loss:	-21.77 %

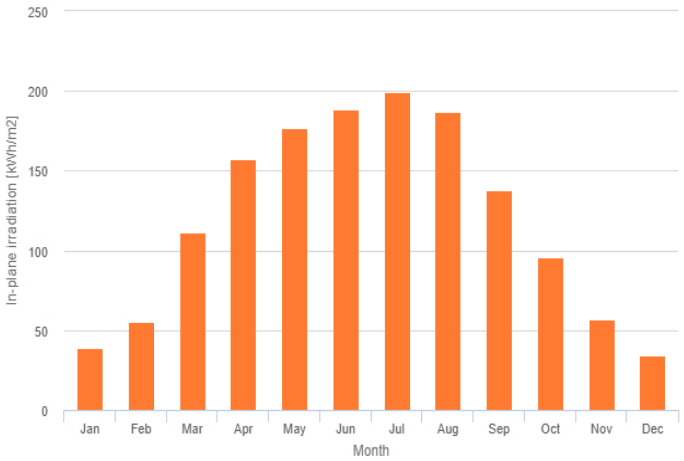
Outline of horizon at chosen location:



Monthly energy output from fix-angle PV system:



Monthly in-plane irradiation for fixed-angle:



Monthly PV energy and solar irradiation

Month	E_m	H(i)_m	SD_m
January	32319.4	39.3	6756.4
February	45237.5	55.2	12046.7
March	91255.2	111.4	18538.2
April	123520.4	157.1	15710.2
May	135772.9	176.9	15732.8
June	141542.2	188.2	10344.8
July	148443.1	199.1	12245.0
August	139610.5	186.7	12991.7
September	106261.7	137.7	11446.8
October	76373.3	95.8	11894.7
November	46480.2	57.1	8325.5
December	27155.1	34.0	7071.3

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

Report generated on 2022/05/17

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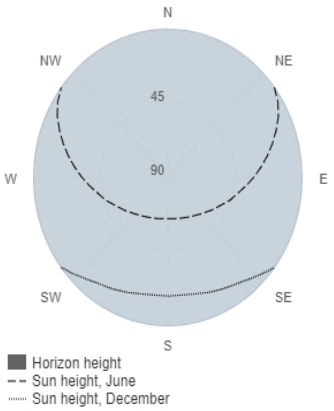
Database used:	PVGIS-SARAH2
PV technology:	Crystalline silicon
PV installed:	990 kWp
System loss:	14 %

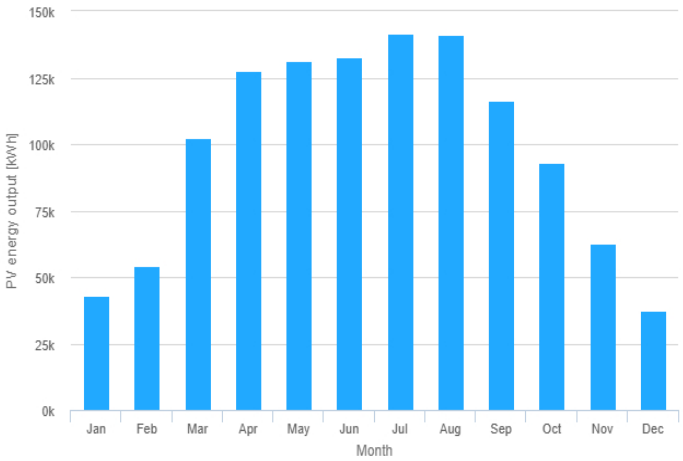
Simulation outputs

Slope angle:	39 (opt) °
Azimuth angle:	0 (opt) °
Yearly PV energy production:	1183394.03 kWh
Yearly in-plane irradiation:	1520.31 kWh/m²
Year-to-year variability:	49098.85 kWh
Changes in output due to:	
Angle of incidence:	-2.78 %
Spectral effects:	1.31 %
Temperature and low irradiance:	-7.18 %
Total loss:	-21.37 %

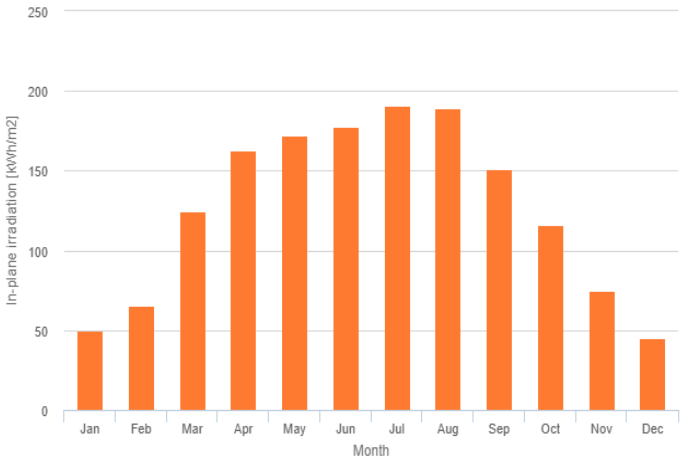
Outline of horizon at chosen location:



Monthly energy output from fix-angle PV system:



Monthly in-plane irradiation for fixed-angle:



Monthly PV energy and solar irradiation

Month	E_m	H(i)_m	SD_m
January	42762.1	50.2	10571.2
February	54353.5	65.4	16770.0
March	102121.1	124.7	23304.3
April	127627.6	163.1	17474.5
May	131277.6	171.8	15492.3
June	132895.6	177.4	9626.0
July	141450.0	190.6	11873.5
August	141066.0	189.6	13770.9
September	116585.8	151.5	13681.6
October	93165.9	116.2	16192.6
November	62555.5	75.0	12729.6
December	37533.3	44.9	11544.7

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].

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