Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

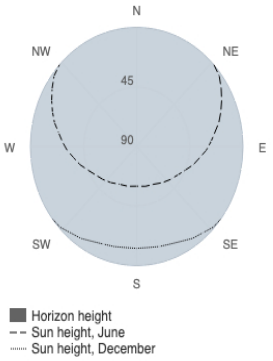
Provided inputs:

Latitude/Longitude:	53.074,8.832
Horizon:	Calculated
Database used:	PVGIS-SARAH3
PV technology:	Cryst Sil Original
PV installed:	25 kWp
System loss:	14 %

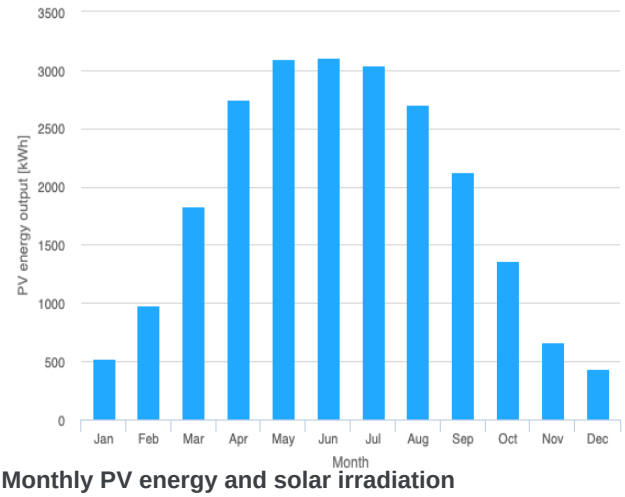
Simulation outputs

Slope angle:	25 °
Azimuth angle:	-45 °
Yearly PV energy production:	22626.07 kWh
Yearly in-plane irradiation:	1171.23 kWh/m²
Year-to-year variability:	1104.00 kWh
Changes in output due to:	
Angle of incidence:	-3.41 %
Spectral effects:	1.73 %
Temperature and low irradiance:	-8.56 %
Total loss:	-22.73 %

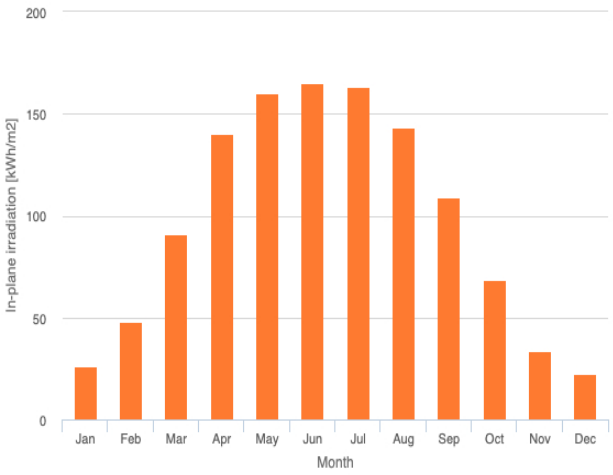
Outline of horizon at chosen location:



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	522.5	26.2	76.1
February	984.1	48.0	214.6
March	1833.0	90.7	304.9
April	2751.8	140.1	327.7
May	3093.2	160.4	392.9
June	3112.7	165.3	260.6
July	3041.1	163.1	360.2
August	2705.9	143.3	241.1
September	2123.1	109.3	228.7
October	1361.2	68.8	210.3
November	662.2	33.6	107.2
December	435.2	22.4	88.8

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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