Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

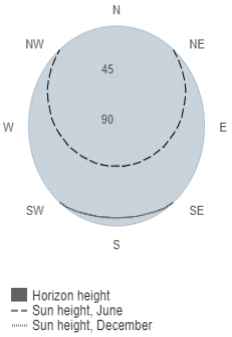
Provided inputs:

Latitude/Longitude:	59.320,24.557
Horizon:	Calculated
Database used:	PVGIS-SARAH2
PV technology:	Crystalline silicon
PV installed:	11.83 kWp
System loss:	14 %

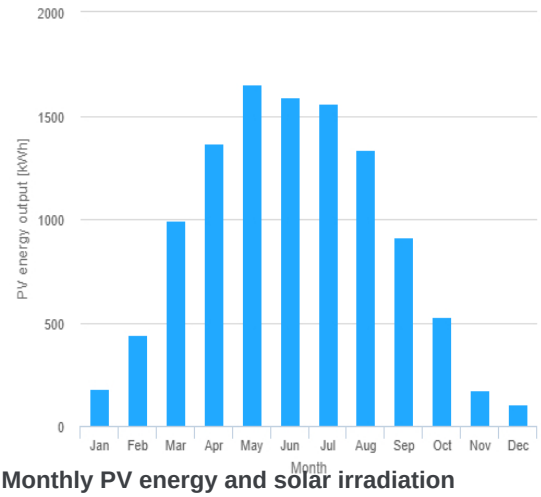
Simulation outputs

Slope angle:	35 °
Azimuth angle:	0 °
Yearly PV energy production:	10840.09 kWh
Yearly in-plane irradiation:	1155.77 kWh/m²
Year-to-year variability:	597.17 kWh
Changes in output due to:	
Angle of incidence:	-3.06 %
Spectral effects:	NaN %
Temperature and low irradiance:	-4.9 %
Total loss:	-20.72 %

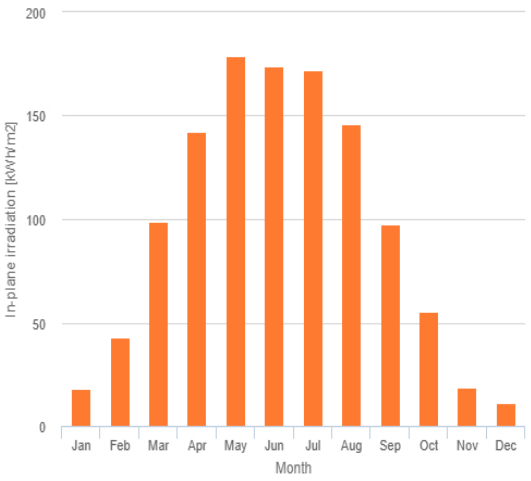
Outline of horizon at chosen location:



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	181.1	18.2	55.1
February	440.9	43.0	145.5
March	996.4	98.9	231.7
April	1366.7	142.2	205.5
May	1654.5	179.0	218.1
June	1588.9	174.0	154.2
July	1556.2	172.2	161.2
August	1335.1	145.8	189.1
September	913.9	97.6	125.6
October	530.2	55.4	133.1
November	171.8	18.5	38.7
December	104.5	11.1	31.5

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].

Report generated on 2024/02/06