Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

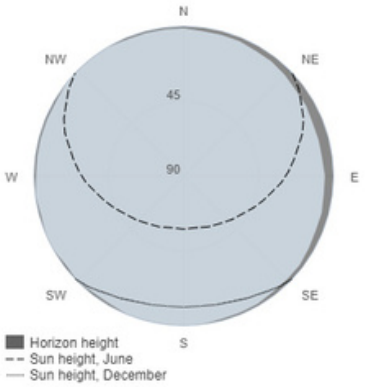
Provided inputs:

Latitude/Longitude: [redacted]
Horizon: Calculated
Database used:PVGIS-SARAH2
PV technology:Crystalline silicon
PV installed:15 kWp
System loss:14 %

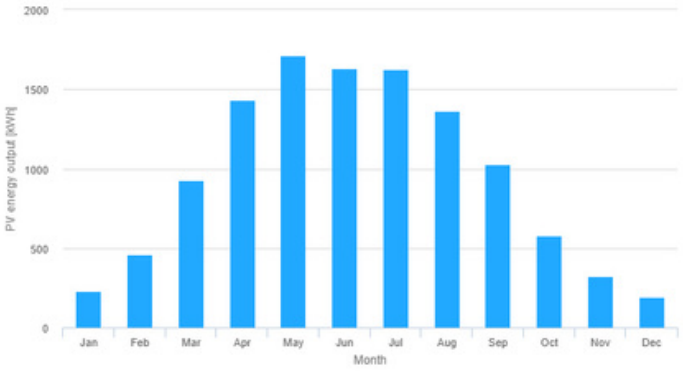
Simulation outputs

Slope angle:	15 °
Azimuth angle:	45 °
Yearly PV energy production:	11510.21 kWh
Yearly in-plane irradiation:	978.15 kWh/m²
Year-to-year variability:	362.81 kWh
Changes in output due to:	
Angle of incidence:	-4.11 %
Spectral effects:	1.83 %
Temperature and low irradiance:	-6.57 %
Total loss:	-21.55 %

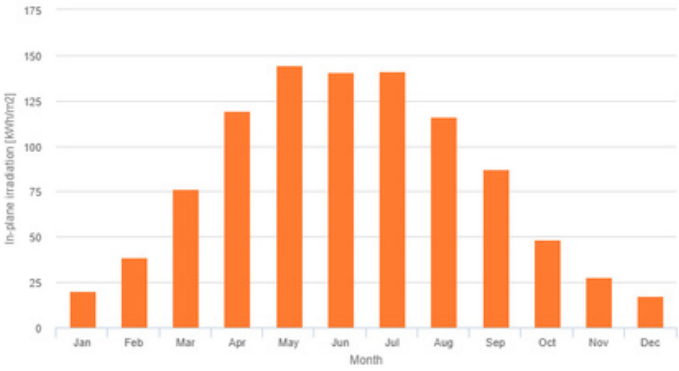
Outline of horizon at chosen location:



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	230.7	20.3	33.2
February	463.6	38.8	75.4
March	927.5	76.2	102.7
April	1432.6	119.2	195.8
May	1712.3	144.4	183.2
June	1632.6	140.5	171.8
July	1628.4	141.3	234.3
August	1363.1	116.3	118.4
September	1028.2	87.0	103.7
October	576.9	48.7	85.0
November	322.4	27.9	43.0
December	191.9	17.4	28.4

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 2022/12/09

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

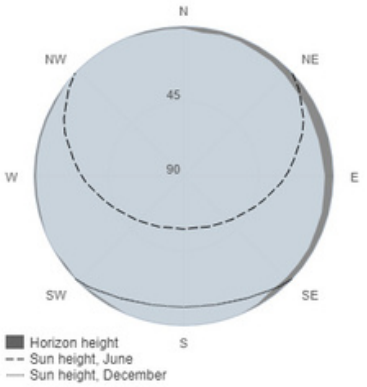
Provided inputs:

Latitude/Longitude: [redacted]
Horizon: Calculated
Database used:PVGIS-SARAH2
PV technology:Crystalline silicon
PV installed:25 kWp
System loss:14 %

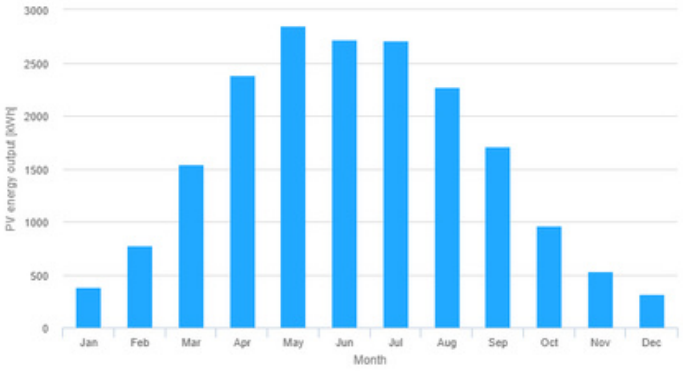
Simulation outputs

Slope angle:	15 °
Azimuth angle:	45 °
Yearly PV energy production:	19183.54 kWh
Yearly in-plane irradiation:	978.12 kWh/m²
Year-to-year variability:	604.67 kWh
Changes in output due to:	
Angle of incidence:	-4.11 %
Spectral effects:	1.83 %
Temperature and low irradiance:	-6.57 %
Total loss:	-21.55 %

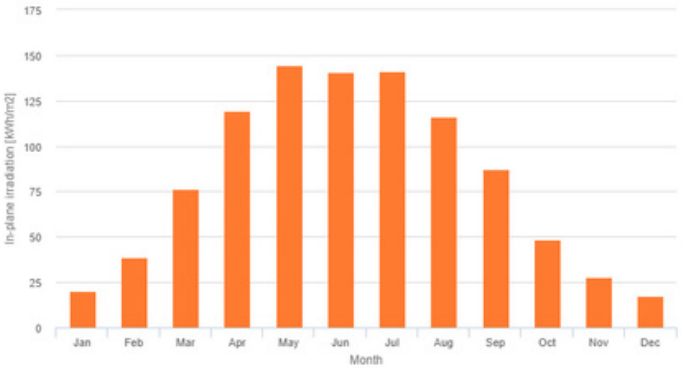
Outline of horizon at chosen location:



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	384.5	20.3	55.3
February	772.7	38.8	125.6
March	1545.8	76.2	171.1
April	2387.7	119.2	326.3
May	2853.9	144.4	305.3
June	2720.9	140.5	286.3
July	2714.0	141.3	390.4
August	2271.8	116.3	197.3
September	1713.6	87.0	172.8
October	961.5	48.7	141.7
November	537.3	27.9	71.8
December	319.7	17.4	47.2

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 2022/12/07

Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

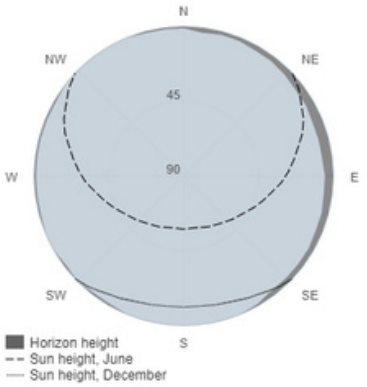
Provided inputs:

Latitude/Longitude: [redacted]
Horizon: Calculated
Database used:PVGIS-SARAH2
PV technology:Crystalline silicon
PV installed:35 kWp
System loss:14 %

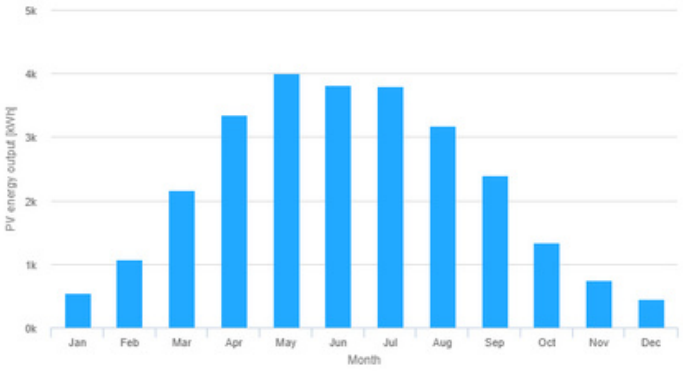
Simulation outputs

Slope angle:	15 °
Azimuth angle:	45 °
Yearly PV energy production:	26856.96 kWh
Yearly in-plane irradiation:	978.12 kWh/m²
Year-to-year variability:	846.54 kWh
Changes in output due to:	
Angle of incidence:	-4.11 %
Spectral effects:	1.83 %
Temperature and low irradiance:	-6.57 %
Total loss:	-21.55 %

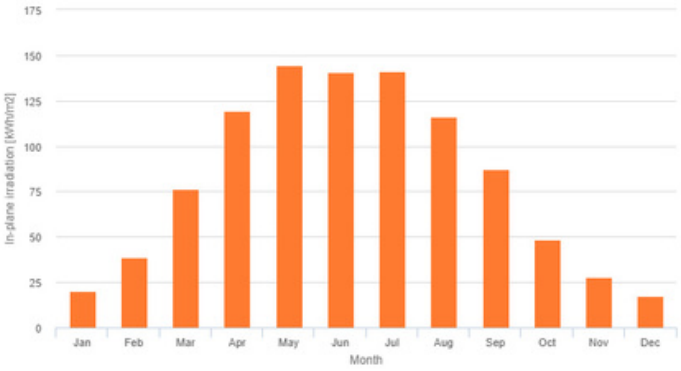
Outline of horizon at chosen location:



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	538.4	20.3	77.4
February	1081.8	38.8	175.9
March	2164.1	76.2	239.5
April	3342.8	119.2	456.8
May	3995.5	144.4	427.4
June	3809.3	140.5	400.8
July	3799.6	141.3	546.6
August	3180.6	116.3	276.3
September	2399.0	87.0	242.0
October	1346.1	48.7	198.3
November	752.2	27.9	100.5
December	447.6	17.4	66.1

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 2022/12/07