

# Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

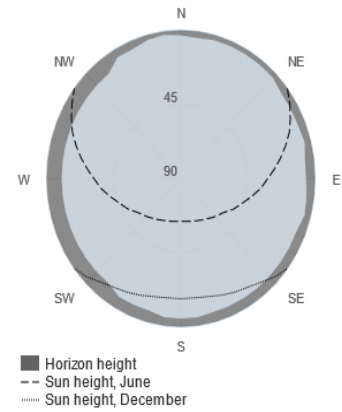
## Provided inputs:

Latitude/Longitude: 49.247,16.672  
 Horizon: Calculated  
 Database used: PVGIS-SARAH2  
 PV technology: Crystalline silicon  
 PV installed: 12.24 kWp  
 System loss: 14 %

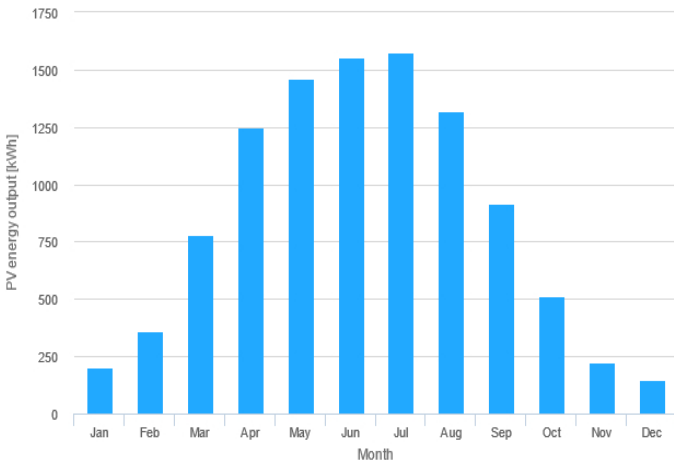
## Simulation outputs

Slope angle: 21 °  
 Azimuth angle: -117 °  
 Yearly PV energy production: 10302.52 kWh  
 Yearly in-plane irradiation: 1079.34 kWh/m<sup>2</sup>  
 Year-to-year variability: 342.96 kWh  
 Changes in output due to:  
 Angle of incidence: -4.53 %  
 Spectral effects: 1.35 %  
 Temperature and low irradiance: -6.29 %  
 Total loss: -22.02 %

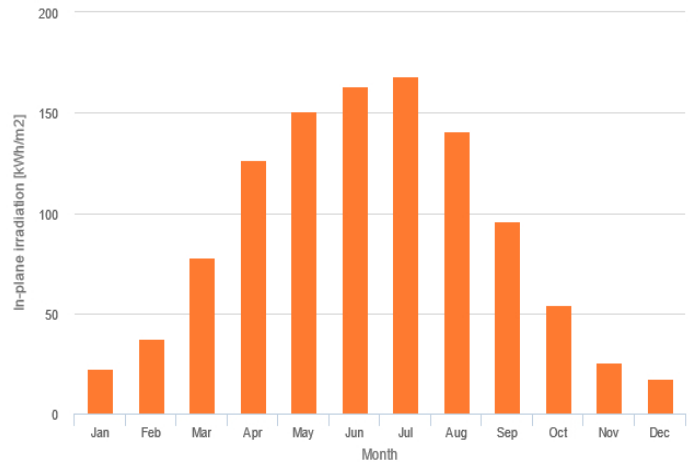
## Outline of horizon at chosen location:



## 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	200.4	22.1	22.1
February	360.5	37.1	62.6
March	780.0	78.1	104.0
April	1245.9	126.6	131.4
May	1462.2	150.6	201.8
June	1555.0	163.3	139.6
July	1576.0	168.4	153.4
August	1321.4	140.6	106.1
September	917.9	95.8	78.5
October	510.4	54.0	61.0
November	224.2	25.3	24.1
December	148.6	17.5	14.8

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].