

# Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

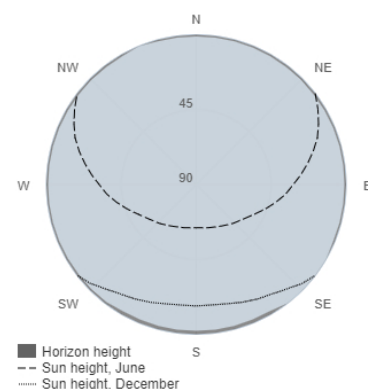
## Provided inputs:

Latitude/Longitude: 49.176, 16.628  
 Horizon: Calculated  
 Database used: PVGIS-SARAH  
 PV technology: Crystalline silicon  
 PV installed: 19.6 kWp  
 System loss: 10 %

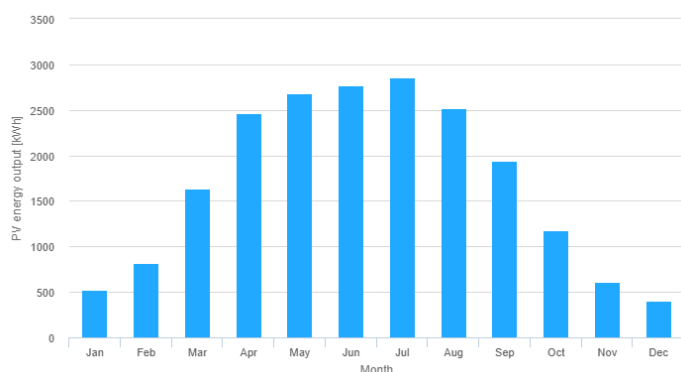
## Simulation outputs

Slope angle: 10 °  
 Azimuth angle: 0 °  
 Yearly PV energy production: 20399.04 kWh  
 Yearly in-plane irradiation: 1259 kWh/m<sup>2</sup>  
 Year-to-year variability: 1123.49 kWh  
 Changes in output due to:  
 Angle of incidence: -3.6 %  
 Spectral effects: 1.41 %  
 Temperature and low irradiance: -6.04 %  
 Total loss: -17.33 %

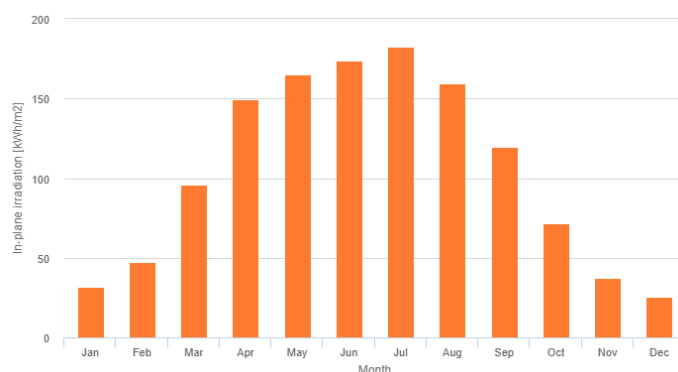
## Outline of horizon at chosen location:



## 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	528.1	31.6	120.5
February	815.6	47.5	220.9
March	1633.7	96.1	341.5
April	2463.0	149.3	322.4
May	2679.8	165.0	398.3
June	2765.2	173.6	219.7
July	2857.4	182.8	325.4
August	2518.8	159.6	250.1
September	1940.5	119.4	227.6
October	1179.8	71.5	277.0
November	610.2	37.3	99.8
December	406.7	25.4	59.9

E\_m: Average monthly electricity production from the given 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].