

# Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

## Provided inputs:

Latitude/Longitude: 52.408, 16.930  
Horizon: Calculated  
Database used: PVGIS-CMSAF  
PV technology: Crystalline silicon  
PV installed: 6.12 kWp  
System loss: 14 %

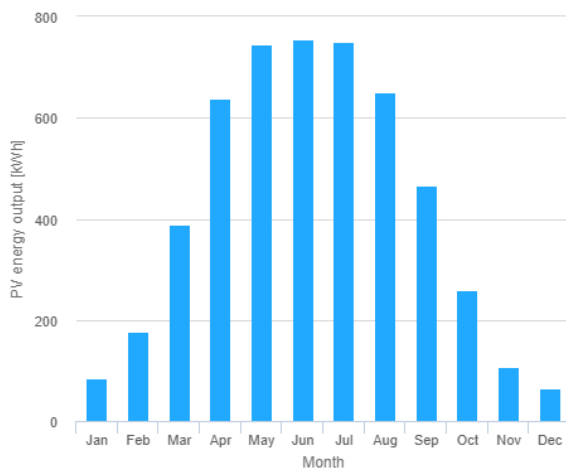
## Simulation outputs

Slope angle: 35 °  
Azimuth angle: -90 °  
Yearly PV energy production: 5090 kWh  
Yearly in-plane irradiation: 1070 kWh/m<sup>2</sup>  
Year to year variability: 181.00 %  
Changes in output due to:  
Angle of incidence: -3.6 %  
Spectral effects: 1.6 %  
Temperature and low irradiance: -8 %  
Total loss: -22.5 %

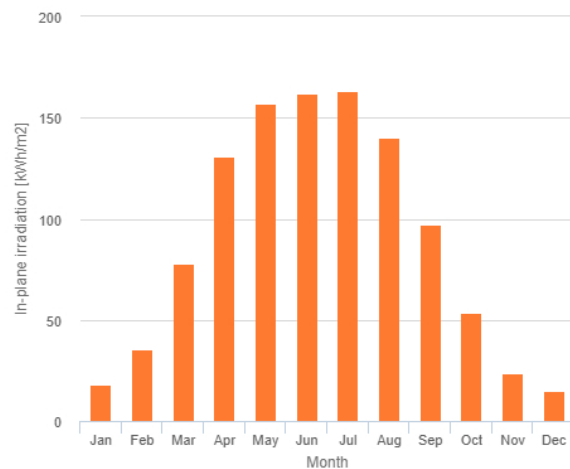
## Outline of horizon at chosen location:



## Monthly energy output from fix-angle PV system:



## Monthly in-plane irradiation for fixed-angle:



## Monthly PV energy and solar irradiation

Month	Em	Hm	SDm
January	84.1	18.2	8.4
February	177	35.5	39.9
March	389	77.7	46.4
April	639	131	69.9
May	745	157	97.6
June	755	162	66.9
July	751	163	88.4
August	650	140	47.3
September	466	97.4	42.1
October	259	53.6	43.8
November	108	23.5	24.7
December	64.9	14.8	10.9

Em: Average monthly electricity production from the given system [kWh].

Hm: Average monthly sum of global irradiation per square meter received by the modules of the given system [kWh/m<sup>2</sup>].

SDm: Standard deviation of the monthly electricity production due to year-to-year variation [kWh].