

# Performance of grid-connected PV

PVGIS-5 estimates of solar electricity generation:

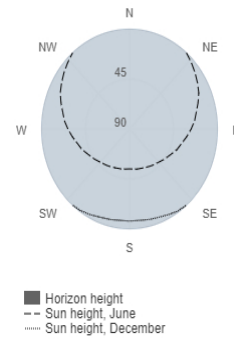
## Provided inputs:

Latitude/Longitude: 59.320,24.557  
 Horizon: Calculated  
 Database used: PVGIS-SARAH2  
 PV technology: Crystalline silicon  
 PV installed: 7.28 kWp  
 System loss: 14 %

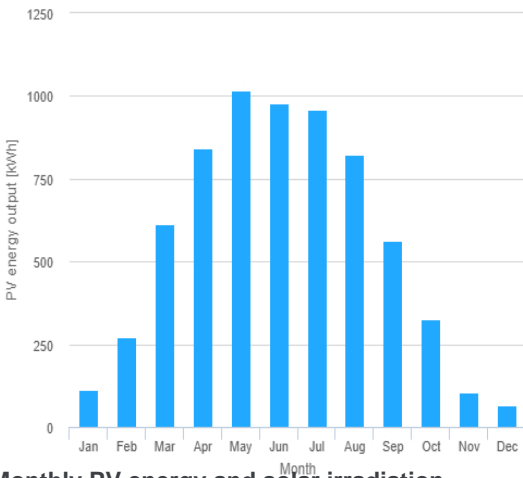
## Simulation outputs

Slope angle: 35 °  
 Azimuth angle: 0 °  
 Yearly PV energy production: 6670.82 kWh  
 Yearly in-plane irradiation: 1155.77 kWh/m<sup>2</sup>  
 Year-to-year variability: 367.49 kWh  
 Changes in output due to:  
 Angle of incidence: -3.06 %  
 Spectral effects: NaN %  
 Temperature and low irradiance: -4.9 %  
 Total loss: -20.72 %

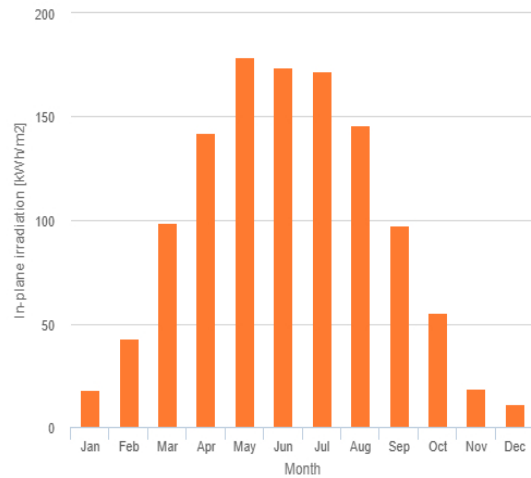
## Outline of horizon at chosen location:



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



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



## Monthly PV energy and solar irradiation

Month	E <sub>m</sub>	H(i) <sub>m</sub>	SD <sub>m</sub>
January	111.4	18.2	33.9
February	271.3	43.0	89.5
March	613.2	98.9	142.6
April	841.1	142.2	126.5
May	1018.2	179.0	134.2
June	977.8	174.0	94.9
July	957.6	172.2	99.2
August	821.6	145.8	116.4
September	562.4	97.6	77.3
October	326.3	55.4	81.9
November	105.7	18.5	23.8
December	64.3	11.1	19.4

E<sub>m</sub>: Average monthly electricity production from the defined system [kWh].

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

SD<sub>m</sub>: Standard deviation of the monthly electricity production due to year-to-year variation [kWh].