

# 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

14 %

System loss:

Simulation outputs

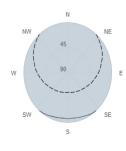
Slope angle: 35 °
Azimuth angle: 0 °
Yearly PV energy production: 6670

Yearly PV energy production: 6670.82 kWh
Yearly in-plane irradiation: 1155.77 kWh/m²
Year-to-year variability: 367.49 kWh
Changes in output due to:

Angle of incidence: -3.06 %

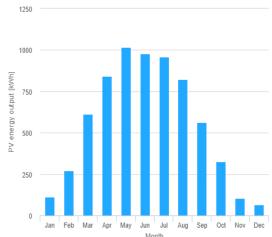
Spectral effects: NaN %
Temperature and low irradiance: -4.9 %
Total loss: -20.72 %

#### Outline of horizon at chosen location:

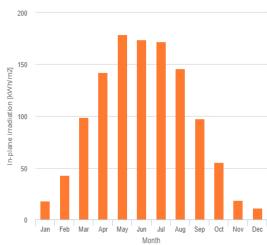


Horizon height
Sun height, June
Sun height, December

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



Monthly in-plane irradiation for fixed-angle:



### Monthly PV energy and solar irradiation

-	0,		
Month	E_m	H(i)_m	SD_m
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\_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].

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