

# Performance of grid-connected PV

## PVGIS-5 estimates of solar electricity generation:

Provided inputs: Latitude/Longitude: 50.831,-1.814

Horizon: Calculated
Database used: PVGIS-SARAH2
PV technology: Crystalline silicon

PV installed: 2580 kWp System loss: 14 % Simulation outputs

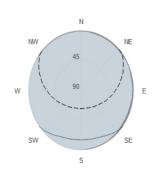
Slope angle: 40 (opt)  $^{\circ}$  Azimuth angle: 0 (opt)  $^{\circ}$ 

Yearly PV energy production: 2897589.33 kWh
Yearly in-plane irradiation: 1377.33 kWh/m²
Year-to-year variability: 85500.93 kWh

Changes in output due to:

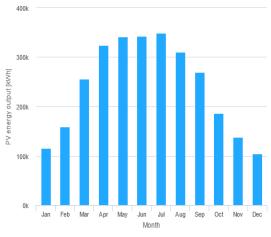
Angle of incidence: -2.96 %
Spectral effects: 1.68 %
Temperature and low irradiance: -3.9 %
Total loss: -18.46 %

#### Outline of horizon at chosen location:

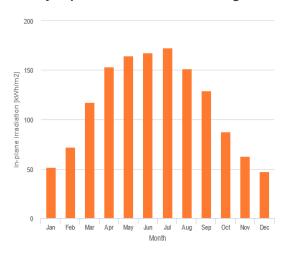


Horizon height
-- Sun height, June
Sun height, December

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



# Monthly in-plane irradiation for fixed-angle:



#### Monthly PV energy and solar irradiation

Month	E_m	H(i)_m	SD_m
January	115397	. <b>5</b> 1.8	16259.2
February	158830	. <b>7</b> 1.8	31655.5
March	256490	. <b>8</b> 17.6	43467.9
April	324842	. <b>8</b> 53.3	45944.2
May	341623	. <b>5</b> 64.5	37573.1
June	342540	<b>.5</b> 67.5	37780.3
July	348700	. <b>7</b> 72.6	36046.3
August	310640	. <b>8</b> 51.9	35010.8
September	269566	.429.2	23433.0
October	186351	. <b>2</b> 7.3	25270.5
November	137895	. <b>6</b> 2.9	23799.2
Docombor	104700	47.2	17776 6

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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