



## Performance of Grid-connected PV

### PVGIS estimates of solar electricity generation

Location: 40°31'47" North, 22°11'32" East, Elevation: 126 m a.s.l., (Naousa Imathias – Greece)

Nominal power of the PV system: 500.0 kW (crystalline silicon)

Estimated losses due to temperature: 10.2% (using local ambient temperature)

Estimated loss due to angular reflectance effects: 2.7%

Other losses (cables, inverter etc.): 4.0%

Combined PV system losses: 16.1%

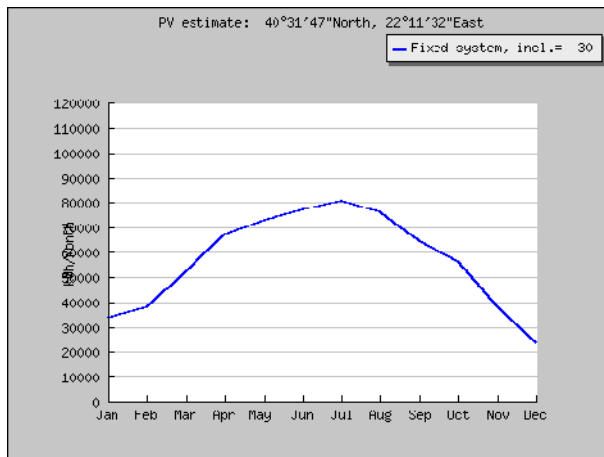
Fixed system: inclination=30 deg., orientation=0 deg.				
Month	Ed	Em	Hd	Hm
Jan	1080.00	33600	2.39	74.2
Feb	1360.00	38100	3.02	84.6
Mar	1690.00	52500	3.87	120
Apr	2230.00	67000	5.25	158
May	2360.00	73200	5.72	177
Jun	2570.00	77200	6.42	193
Jul	2600.00	80500	6.50	202
Aug	2450.00	76100	6.19	192
Sep	2150.00	64400	5.24	157
Oct	1810.00	56200	4.25	132
Nov	1270.00	38000	2.87	86.1
Dec	751.00	23300	1.66	51.4
Year	1860.00	56700	4.46	136
Total for year		680000		1630

Ed: Average daily electricity production from the given system (kWh)

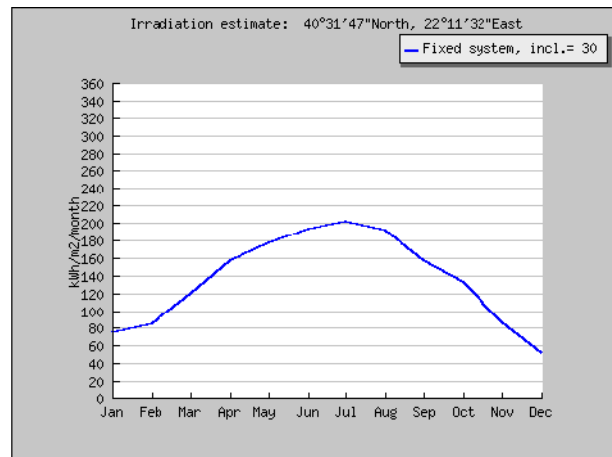
Em: Average monthly electricity production from the given system (kWh)

Hd: Average daily sum of global irradiation per square meter received by the modules of the given system (kWh/m2)

Hm: Average sum of global irradiation per square meter received by the modules of the given system (kWh/m2)



Monthly energy output from fixed-angle PV system



Monthly in-plane irradiation for fixed angle

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## Project Details

- The project company is a incorporated company in accordance with the Greek Law. All licenses and rights are issued on the name of the project company. The solar farm configurations were planned with poly-crystalline modules from TIANWEI (235W P60-FA2), small central inverters from P.O. AURORA (27,6KW) and fixed mounting system. The total investment for the whole solar farms, depending on the finally chosen equipment by the investor including the development costs is approximately 1.8 Million EUR (estimated price).

The Grid-connection offers for the solar farms by the PPC (Public Power Company) do not are already paid and as follows (excluding VAT):

- 500 KWp + 500 KWp/ central Macedonia in Greece = 46.500€ (Grid-connection 120m and 850m).
- 100 KWp/ Schimatari Viotias in central Greece = 18.000€ (Grid-connection 350m estimated price, grid-application is in revision).



## Project Status

### Projects 2x500 KWp central Macedonia in Greece:

- On 28. December 2010 both projects received exception environmental decision of the production license from the Ministry of Environmental, Energy and Climate Change.
- The Grid-connection offer for both projects have been received on 29. January 2012 and on 25. April 2012 respectively.
- The signing of the Power Purchase Agreement (PPA) with the Grid-operator (LAGIE) was signed on 30. April 2012 which the project had be to start operates from 06. September 2012 for this project, for the other project will be done with the submission application, that has been filed on 02. June 2011 and the necessary Grid-connection Agreement with the PPC (Public Power Cooperation, DEH) will must be signed so on 25. October 2012 with the in payment for Grid-connection with the PPC. The secured feeding tariff for the start Project 1x500KWp is 29,208 € Cent/KWh for 20 Years and for the other Project 1x500KWp is 18,000 € Cent/KWh for 20 Years.
- The building license (small works) for both projects have been received on 31. May 2011 and on (new) 17. September 2012 respectively.



## Project Status

### Project 100KWp Schimatari Viotias in central Greece:

All necessary licenses have been received, including the building license of small works, the Grid-connection Agreement and the Power Purchase Agreement.

The secured feeding tariff for this project is 22,500 € Cent/KWh for 20 Years (estimated permit).