

Commission

Joint Research Centre

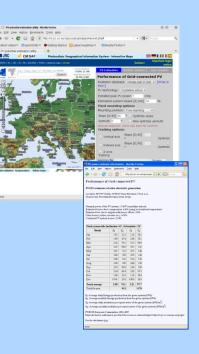
The European Commission's in-house science service

PVGIS Internet tools for the assessment of

photovoltaic solar energy systems

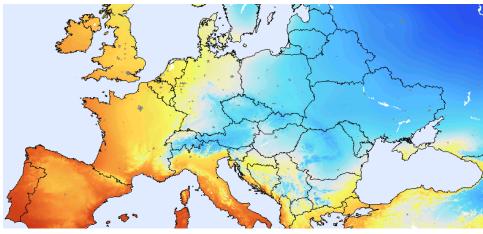
http://re.jrc.ec.europa.eu/pvgis/ Information for any location can be queried by:

- browsing thematic maps
- searching with a place name or its geographical coordinates.



Contact:

Web: http://re.jrc.ec.europa.eu/pvgis/ Email: esti.services@jrc.ec.europa.eu European Commission - JRC Institute for Energy and Transport I-21027 Ispra, Italy



The Photovoltaic Geographical Information System (PVGIS) provides web access to: •solar radiation and temperature data •PV performance assessment tools

Solar Irradiation

Monthly and yearly averages of solar irradiation at horizontal and inclined surfaces, ambient temperature, optimum inclination of PV modules, country maps and animations.

Average daily irradiance

The average daily irradiance profile for a chosen month is calculated for a given module inclination and orientation. Simulation of clear-sky and average real-sky irradiances takes into account also local horizon and terrain shadowing from digital elevation model at 100-m resolution.

Estimation of PV electricity generation

Monthly and yearly PV electricity potential can be assessed for crystalline-silicon or other PV technologies mounted in a fixed position or on various tracking systems. Alternatively, inclination and orientation of fixed-mounted modules can be optimised.

Estimation of off-grid PV systems

Based on daily irradiation sums, PVGIS calculates monthly and yearly energy output as well as statistical information on system reliability and efficiency.

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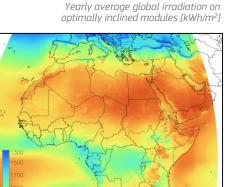
Climatic and geographical data for photovoltaic potential

European subcontinent Solar radiation

- Based on satellite data, 1998-2011, grid resolution ~2.5km
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- Monthly and yearly averages (irradiation/irradiance)
 Grid resolution 1 km (terrain 100 m)
- Optimum inclination of PV modules
- Horizon/terrain shadowing

Ambient temperature

- Interpolated data from ~800 meteorological stations
- Monthly and yearly averages, daily maximum and minimum
- Daily and daytime average profiles
- Period 1995-2006
- Grid resolution 1 km

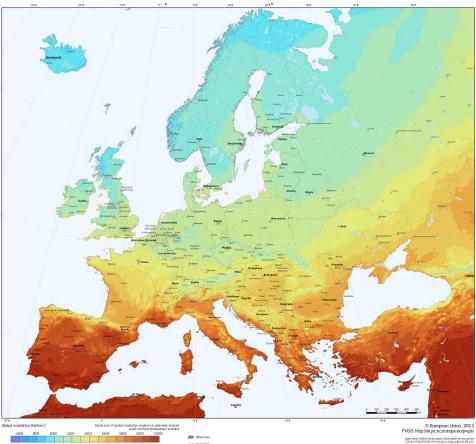


Mediterranean Basin, Africa and South-West Asia

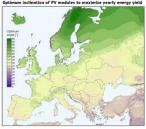
Solar radiation

Solar radiation database computed from Meteosat satellite images by CMSAF (<u>www.cmsaf.eu</u>)

- Monthly and yearly averages
- Probability statistics
- Period 1998-2011

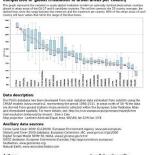


Photovoltaic Solar Electricity Potential in European Countries



put: difference between fixed optimum angle and one-axis





CM SAF