GHI annual variability

About Solargis

We help the solar energy industry to make better decisions by empowering our customers with reliable and accurate data on solar electricity potential during all stages of a project, from prospection to project development and operation.

Hundreds of organisations, worldwide, from start-ups to large enterprises use our data, online software and consultancy services to reduce weather related risk and to optimize management of solar power assets.

Solar Roadmap

Services to help governmental agencies, utilities, and grid operators plan and implement strategy for national or regional solar development

Prospect

Screen and benchmark project opportunities

Evaluate

Make detailed assessment of electricity production for planned power plants

Monitor

Monitor performance of operational assets on a regular basis

Forecast

Forecast solar power production for optimized asset management

Global Horizontal Irradiation

Australia

Essential solar resource data for energy yield calculation and performance assessment of PV power plants
This map represents the long-term average of yearly totals of global horizontal irradiation (GHI), calculated for a period of 12 years (2007–2018). Knowledge of quantity and reliability of GHI is essential for solar resource assessment of the region, assessment of financial viability and accurate analysis of photovoltaic power plants performance throughout their operational lifetime.

The calculation of solar radiation in the region is based on the use of data from geostationary meteorological satellites (operated by JMA), and data from global atmospheric and meteorological models (operated by ECMWF, NOAA and NASA). Primary time step of solar resource parameters is 10 and 30 minutes (MTSAT and Himawari satellite missions). The spatial resolution of the solar resource data in this map is approx. 1 km.

Solargis database, in its global extent, features 10/15/30 minute (depending on the satellite mission) time-series data, which can be aggregated into hourly, daily, monthly, yearly and long-term average data values. The data is available globally, between latitudes 60N and 55S, and is updated in real time. Nominal spatial resolution of data is up to 150 m to identify details driven by terrain elevation and shadowing.

Solorgis solar radiation has been validated with high-quality ground measurements from 150+ solar meteorological stations worldwide. The uncertainty of GHI annual estimates is within range of ±4% to ±8%. We are capable to further reduce data uncertainty locally or regionally using short-term (1-2 years) ground measurements and model adaptation methods.

Solar and meteorological data provided by Solargis help to reduce the uncertainty of solar energy projects, save costs and increase the return on the investments. For more information about the data, maps and software applications visit our website solargis.com.