



Thank you for visiting our **Solar Map of the World**. Since 2004, Green Power Labs has been involved in research and commercial work to support the board scale deployment of solar technology for water and space heating and electrical generation. In our opinion we need to change the way our world consumes and generates energy. We believe knowledge will drive that change. That is why we launched [SolarRating Online](#) on Earth Day 2009. A free online interactive education service SolarRating Online is a fun, interactive place to learn about residential solar installations.

In 2010, we are pleased (and very proud) to launch our Solar Map of the World. A valuable source of information on global horizontal radiation, our Solar Map of the World is an important first step in understanding the immense value of this worldwide energy resource. While solar is not distributed evenly across the world, its capacity to play a significant role in the energy mix of communities, regions and countries is significant. We encourage you to start exploring solar energy options for your home, your city or community; for more information on our work in solar mapping, monitoring and forecasting please visit Green Power Labs site at [Solar for Utilities](#) and [Solar for Communities](#) and [Solar for Power Producers](#)

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About Green Power Labs:

Green Power Labs is a company of world class solar experts working from offices in Halifax, Canada, Adelaide, Australia and Lugano, Switzerland on projects spanning the globe. Our comprehensive knowledge and inter-disciplinary skills support our clients' investment in clean, reliable and affordable energy. We utilize unique and proprietary technologies for mapping, monitoring and forecasting of solar radiation and solar power generation to create innovative, financially sound and environmentally friendly energy solutions for communities, utilities and the built environment. Our capacity in energy planning, engineering and management allows our clients to fully utilize clean energy resources, reduce carbon emissions, and maximize the benefits of solar power generation. As solar resource experts we provide solar resource mapping, monitoring and forecasting services. As solar engineers we assist clients with assessment, planning and implementation of solar technologies. Together these services lead to effective site specific implementation of solar technologies. Our objective is to support our client's capacity to maximize the available solar resource using best practices in system integration, building and site design and system monitoring.

Data Sources:

Please note our Solar Map for the World is derived from publicly available raw solar resource data; for more information on Green Power Labs' services to its clients using our proprietary technology and on site measurement, please contact us at info@greenpowerlabs.com

Coverage	Sources	Resolution	Time Range
World	NASA/SSE	1dd interpolated to 10km	Jul 1983 - Jun 2005
Australia	BOM/JMA/NOAA	6km	Jan 1990 - Sep 2009
Canada	NRCAN/SUNY/NREL	10km	2002 - 2008
United States	NSRDB/SUNY/NREL	10km	1998 - 2005
Brazil	INPE/LABSOLAR/UNEP-SWERA	10km	12 unspecified months
Central America	SUNY/UNEP-SWERA	10km	1999 - 2002
Cuba	SUNY/UNEP-SWERA	10km	1998 - 2002
Africa	NREL/UNEP-SWERA	40km	1985 - 1991
Caribbean	NREL/UNEP-SWERA	40km	1985 - 1991
East Asia	NREL/UNEP-SWERA	40km	1985 - 1991

Abbreviations for Sources

NASA	National Aeronautics and Space Administration
SSE	Surface Meteorology and Solar Energy
BOM	(Australian) Bureau of Meteorology
JMA	Japan Meteorological Agency
NOAA	National Oceanographic & Atmospheric Administration
NRCAN	Natural Resources Canada
SUNY	State University of New York (at Albany)
NREL	National Renewable Energy Laboratory
NSRDB	National Solar Radiation Database
UNEP	United Nations Environment Programme
SWERA	Solar and Wind Energy Resource Assessment
INPE	National Institute for Space Research
LABSOLAR	Laboratory of Solar Energy/Federal University of Santa Catarina, Brazil

Methodology:

Software: ESRI Arc Map, Map Tiler

Australian Bureau of Meteorology	Original Australian coverage annual and monthly average global horizontal radiation grid data was converted into geotiff format (WGS 1984) using ESRI's ArcView 9.3.1 with Spatial Analyst. A unit conversion was also performed changing units from MJ/m ² to Wh/m ² (1 million joules = 277.7777 watt hours). The geotiffs were symbolized with a custom colour ramp in ArcView, exported as RGB images, and then processed with the Map Tiler map overlay generator for display in Google Maps. The Raster to Point and AddXY Coordinates tools in ArcView were used to add Solar resource data stored in the geotiff format to a database for retrieval in the Google Map environment.
NASA	Original world-wide 1x1 decimal degrees SSE 22 year annual and monthly average global horizontal radiation data was interpolated to 0.1 decimal degrees using the Spline method in ArcView 9.3.1 and converted to geotiff format. These were also clipped to exclude major water body areas. The geotiffs were symbolized with a custom colour ramp in ArcView, exported as RGB images, and then processed with the Map Tiler map overlay generator for display in Google Maps. The Raster to Point and AddXY Coordinates tools in ArcView were used to add Solar resource data stored in the geotiff format to a database for retrieval in the Google Map environment.
SUNY/INPE/LABSOLAR/SWERA (10 km)	SUNY annual and monthly average global horizontal radiation data for Canada were converted to ESRI shapefile from xyz table format, then to geotiff using the Feature to Raster tool in ArcView.

SUNY data for USA, Cuba, and Central America as well as INPE/LABSOLAR data for Brazil were converted from ESRI shapefile to geotiff using the Feature to Raster tool in ArcView (values for annual and monthly average global horizontal radiation). Once in geotiff format, rasters for each country were shaped into one geotiff image for the annual average and each monthly average. The geotiffs were symbolized with a custom colour ramp in ArcView, exported as RGB images, and then processed with the Map Tiler map overlay generator for display in Google Maps. The Raster to Point and AddXY Coordinates tools in ArcView were used to add Solar resource data stored in the geotiff format to a database for retrieval in the Google Map environment.

NREL/SWERA (40km)

NREL annual and monthly average global horizontal radiation data for East Asia, the Caribbean, South America, and Africa were converted from ESRI shapefile to geotiff using the Feature to Raster tool in ArcView. Once in geotiff format, rasters for each country were shaped into one geotiff image for the annual average and each monthly average. The geotiffs were symbolized with a custom colour ramp in ArcView, exported as RGB images, and then processed with the Map Tiler map overlay generator for display in Google Maps. The Raster to Point and AddXY Coordinates tools in ArcView were used to add Solar resource data stored in the geotiff format to a database for retrieval in the Google Map environment.

Disclaimer:

Green Power Labs Inc. Solar Map of the World is designed for illustrative, educational purposes ONLY.

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We strongly recommend individuals considering residential or commercial solar installations contact a reputable solar installation firm who should provide a site assessment of the solar resource, recommend appropriate technology, and sufficient decision support information including applicable rebate and incentive programs, life cycle return on investment and CO2 reduction.

Communities, project developers, and utilities are encouraged to visit our site for more information on solar assessment, mapping, monitoring and forecasting.