

Solar 101

The Case for Solar

PV isn't perfect...

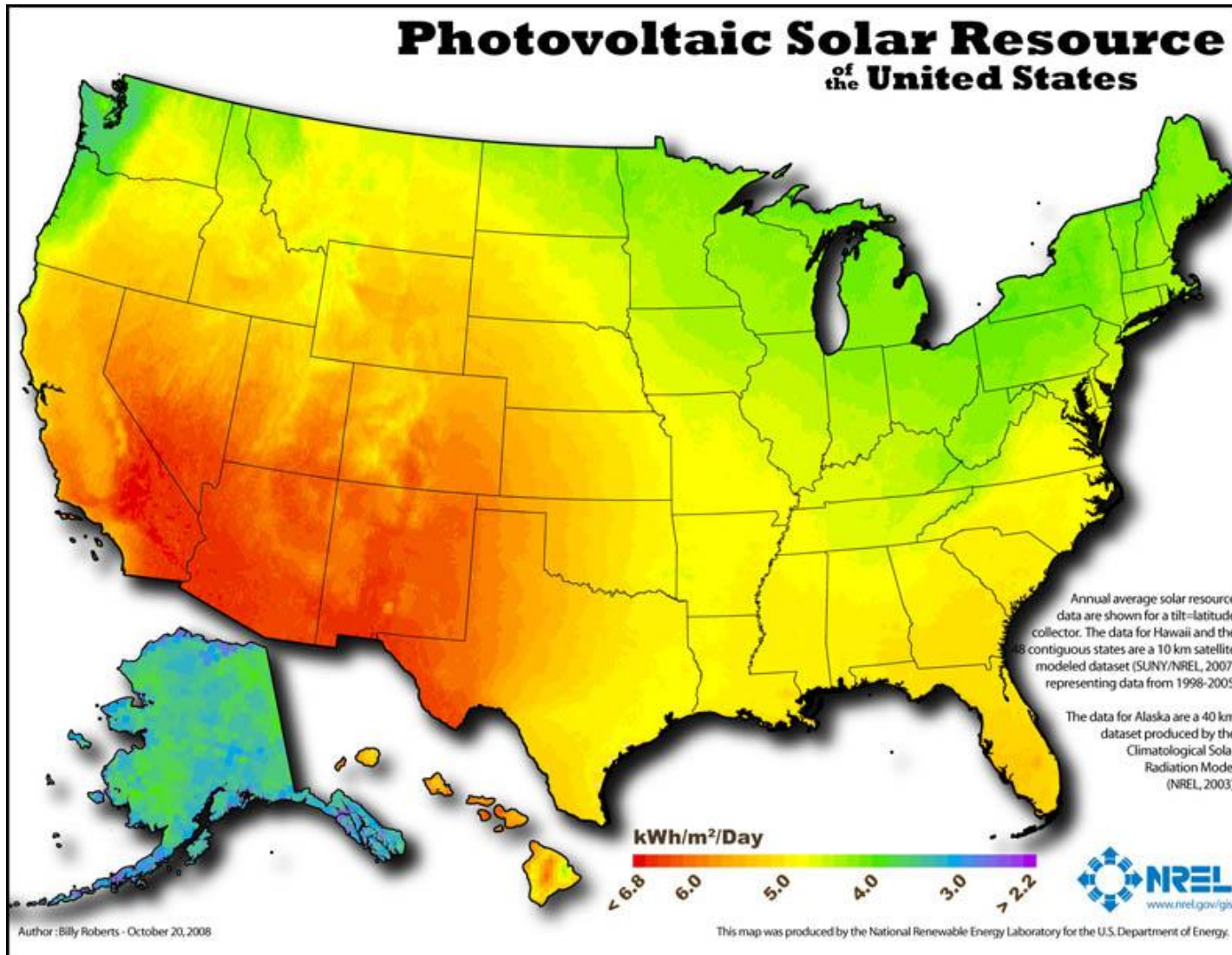
Solar energy doesn't reach the earth's surface on an exact schedule. Weather plays a large role in PV generation estimating.



Sunsets are beautiful but we cannot generate electricity through PV at night.



Variable Resource





A Performance Calculator for Grid-Connected PV Systems

A new map-based interface for PVWatts has been released. This new version combines capabilities from both version 1 (below) and a gridded monthly data set; this updated interface is available at [PVWatts](#). The interface below has been retained for the near future.


Version 1

PVWatts v. 1 can be used for locations accessible through links on the [map](#) below, or through a [text list](#) for U.S. sites; or for sites outside the US lists by region. Researchers at the National Renewable Energy Laboratory developed PVWATTS to permit non-experts to quickly obtain performance for grid-connected PV systems.

Also available is an option to output [hourly performance data](#). This option can be run after the initial calculation, and outputs the data in a separate window. Instructions for saving the output to a text file can be accessed through the "Help" link at the top of the hourly output page.

The US & Its Territories

To start the calculator, click on a state, or choose a state from the [list of States and Territories](#).



Region

To start the calculator, choose a country-city pair.

**Start PVWatts*

For a list of abbreviations, click [here](#).

- Africa
 - EGY Aswan
- Asia
 - ARE Abu Dhabi
- Canada
 - AL Calgary
- Central America & Caribbean
 - CR Z. Pinar del Rio

Results, variant VCO "STP_GE_1.15_Linear_Fixed"

Simulation parameters

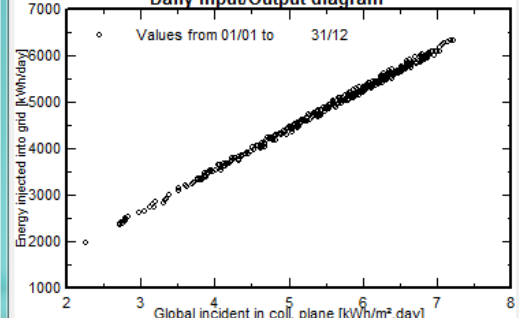
Project	Puerto Rico	System	
Site	SAN JUAN	PV modules	:TP 270-24/Wb-1CUSTOM Inverter trilliance 1MW - Preliminary CET
System type	Grid-Connected	Nominal Power	1152 kWp Inv. unit power 1000 kW
Simulation	01/01 to 31/12 (Generic meteo data)	MPP Voltage	35.8 V Nb. of inv. 1
		MPP Current	7.6 A

Main results

System Production	1749 MWh/yr	Normalized prod.	4.16 kWh/kWp/day
Specific prod.	1519 kWh/kWp/yr	Array losses	1.16 kWh/kWp/day
Performance Ratio	0.762	System losses	0.14 kWh/kWp/day

Daily Input/Output diagram

Values from 01/01 to 31/12



Detailed results

Report

Tables

Predef. graphs

Hourly graphs

Economic evaluation

Print

Load

Back

Save

Why Solar?

No Fossil Fuels

- Once a PV System is installed it produces “clean” electricity. It uses sunlight as its fuel so it is completely renewable and does not produce harmful emissions.

Simplicity

- PV systems have no moving parts and do not require continuous maintenance. They can also be deployed to almost any area in the world.

Longevity

- Solar modules have long warranties and have been proven to last for more than 40 years. As long as the sun continues to shine, a PV system will unobtrusively produce green electricity.

Safety

- Because there is no fuel, there is no danger in working with harmful chemicals or highly flammable and combustible materials.

Recycleability

- PV systems use basic materials such as silicon, copper, steel and aluminum. They can have a very low environmental impact and can be reused or recycled at the end of their useful life.

