
Solar Energy Tools, Data and Information Resources to Inform Decision Making

IMBY

In My Backyard, or IMBY, is a small scale PV and Wind simulation tool that provides a quick estimation of production potentials. Homeowners, business owners, and policy makers can use IMBY get a quick and easy estimate of whether PV or Wind makes sense at their location. IMBY uses a map-based interface to allow you to choose the exact location of your PV array. Based on your location, system size, and other variables, IMBY estimates the electricity production you can expect from your system.

URL: <http://mercator.nrel.gov/imby/>

Solar Prospector

The Solar Prospector is a web-based GIS tool designed to assist industry professionals in the siting of solar. The tool employs various GIS datasets to help identify areas that may have a high potential for plant development.

This project assists the industry by providing critical information about location of solar resources, land ownership, and general infrastructure in an easy to use map format.

URL: <http://maps.nrel.gov/prospector>

PV Watts

The PVWatts application is an interactive map based interface to rapidly utilize the PVWatts calculator. The PVWatts calculator is a basic solar modeling tool developed at NREL to allow non-experts to quickly obtain performance estimates for grid-connected PV systems. Users can get an estimate of expected monthly and annual solar resource values for any location in the United States.

URL: http://mapserve3.nrel.gov/PVWatts_View/index.html

System Advisor Model (SAM)

The System Advisor Model (SAM) is a performance and financial model designed to facilitate decision making for people involved in the renewable energy industry. SAM makes performance predictions and cost of energy estimates for grid-connected power projects based on installation and operating costs and system design parameters that you specify as inputs to the model. Projects can be either on the customer side of the utility meter, buying and selling electricity at retail rates, or on the utility side of the meter, selling electricity at a price negotiated through a power purchase agreement (PPA).

URL: <http://www.nrel.gov/analysis/sam>

CREST

The Cost of Renewable Energy Spreadsheet Tool (CREST) is an economic cash flow model designed to enable PUCs and the renewable energy community to assess projects, design cost-based incentives (e.g., feed-in tariffs), and evaluate the impact of tax incentives or other support structures.

URL: <http://financere.nrel.gov/finance/content/CREST-model>

OpenPV

The Open PV Mapping Project is a collaborative effort between government, industry, and the public that is compiling a comprehensive database of photovoltaic (PV) installation data for the United States.

The data collected is actively maintained by the contributors and are always changing to provide an evolving, up-to-date snapshot of the US solar power market.

URL: <http://openpv.nrel.gov>

Tracking the Sun

Tracking the Sun is an annual report series, now in its fifth edition, that characterizes historical trends in the installed price of grid-connected PV systems in the United States. The report series is based on an extensive underlying database of project-level data for operational PV systems (largely the same data used within Open PV). The report documents and analyzes system pricing trends over time and by system size, state, and customer segment, between third party owned and host customer owned systems, and across various applications and technology types.

URL: <http://emp.lbl.gov/publications/tracking-sun-v-historical-summary-installed-price-photovoltaics-united-states-1998-2011>

OpenEI

Open Energy Information is a knowledge sharing online community dedicated to connecting people with the latest energy information and data.

OpenEI provides access to energy-related information via geographic discovery, visualizations and apps, and topic-oriented gateways. It contains a growing source of energy information contributed by a variety of stakeholders. The Utility Rate Database is housed in OpenEI.

URL: <http://openei.org>

JEDI

The Jobs and Economic Development Impact (JEDI) models are user-friendly tools that use industry norm default inputs to estimate the economic impacts of constructing and operating power generation and biofuel plants.

Jobs, earnings, and output are distributed across three categories:

- Project Development and Onsite Labor Impacts
- Local Revenue, Turbine, and Supply Chain Impacts
- Induced Impacts.

URL: http://www.nrel.gov/analysis/jedi/about_jedi.html

SolarDS

SolarDS is a market penetration model that forecasts PV installations on residential and commercial rooftops in the U.S. under various economic scenarios to 2050. SolarDS was developed to examine the market competitiveness of PV based on regional solar resources, capital costs, electricity prices, utility rate structures, and federal and local incentives.

URL: <http://www.nrel.gov/docs/fy10osti/45832.pdf>

Regional Energy Deployment Systems Model (ReEDS)

Regional Energy Deployment System (ReEDS) is a multi-regional, multi-time period, Geographic Information System (GIS), and linear programming model of capacity expansion in the electric sector of the United States. The model is designed to conduct analysis of the critical energy issues in today's electric sector with detailed treatment of the full potential of conventional and renewable electricity generating technologies as well as electricity storage. The principal issues addressed include access to and cost of transmission, access to and quality of renewable resources, the variability of wind and solar power, and the influence of variability on the reliability of the grid.

URL: <http://www.nrel.gov/analysis/reeds/>

Developer Network

The National Renewable Energy Laboratory's developer network helps developers access and use energy data via Web services, including renewable energy data. Use this Web service documentation to access and use energy data via application programming interfaces (APIs) in these renewable energy categories.

URL: <http://developer.nrel.gov/doc/solar>

Find these tools and more at: http://www.nrel.gov/analysis/analysis_tools_tech_sol.html/

Technical Assistance

Technical Assistance Map*

Definition of Technical Assistance: For the purpose of this exercise, directed at State and Local Governments (including Tribal). Anything in red is TA that is not pertinent to PAAT members.

Program	TAP	STAT	Solar Ops
Who is eligible?	State, local and tribal officials	State and Local Govt	Local Govt
Technologies Covered	EE/RE	Solar	Solar
Lead Funder	DOE WIP	DOE Solar Program	DOE Solar Program
Implementer	Multiple	NREL/ LBNL	ICLEI Team
Style (Training, Quick Response (QR), In Depth (ID), Ask An Expert (AE)**	Training, QR, ID	Training, QR, ID	Training, QR
Contact Info/Website	TechnicalAssistanceProgram@ee.doe.gov ----- http://www1.eere.energy.gov/wip/assistance.html	stat@nrel.gov ----- http://www.nrel.gov/ap/solar_tech_assistance/	solar-usa@iclei.org ----- http://solaroutreach.org/

*TA not included on map: U.S. Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration (NOAA), Economic Development Administration (EDA), Department of Housing and Urban Development (HUD), Department of Agriculture (USDA), National Tribal Air Association (NTAA), and RE.invest Initiative

**Definitions of TA Style:

Training: Webinars, in person training, educational sessions, etc.

Quick Response (QR): Less than 80 hours of subject matter expert effort, can include expert testimony, white papers, technical papers, memos, etc.

In Depth (ID): More than 80 hours of subject matter expert effort, can include expert testimony, white papers, technical papers, memos, etc.