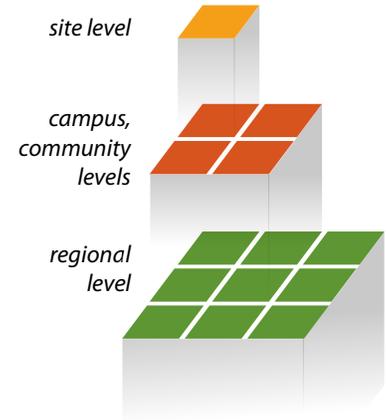




An Introduction to Solar Decision-Making Tools

The National Renewable Energy Laboratory (NREL) offers a variety of models and analysis tools to help decision makers evaluate and make informed decisions about solar projects, policies, and programs. This fact sheet aims to help decision makers determine which NREL tool to use for a given solar project or policy question, depending on its scope.



SAM

What are the costs, cash flow, and performance predictions for my solar, wind, or geothermal project?

The System Advisor Model (SAM) is an analysis tool that provides performance predictions and cost of energy estimates for grid-connected electricity generating systems based on location and system design.

What outputs will SAM provide?

- Energy production estimates on a monthly and annual basis
- Detailed cash flow analysis including capital costs, internal rate of return, and levelized cost of energy

Who typically uses the outputs from a SAM analysis?

- Project managers and engineers, policy analysts, technology developers, state and local policymakers

What information will I need to input into SAM?

- System size (in kilowatts)
- Proposed system location
- System type
- Utility rates
- Additional optional inputs to yield a more accurate analysis

How can I access SAM?

- SAM is available for public download. Learn more about the tool at sam.nrel.gov.

REopt

What combination of energy technologies and storage options will help my site, campus, or community meet its energy goals?

The Renewable Energy Optimization (REopt) model is a decision support tool used to optimize energy systems for buildings, campuses, communities, and microgrids.

What outputs will REopt provide?

- Life-cycle cost, effective size, and combination of different technology options
- Optimal electricity dispatch for maximum economic efficiency
- Net present value of project implementation

Who typically uses the outputs from a REopt analysis?

- Project developers, building owners, state and local policymakers

What information will I need to input into REopt?

- Location
- Land availability
- Utility rates
- Energy goals

How can I access REopt?

- There are two versions of REopt. REopt Lite is available online and optimizes exclusively for solar and battery storage. The full REopt model is not available for public download, but can be accessed by contacting NREL's Solar Technical Assistance Team. Learn more about the tool at reopt.nrel.gov.



What is the potential adoption of distributed energy resources in my jurisdiction based on various technological and policy factors?

The Distributed Generation Market Demand (dGen) model is a geospatially rich market-penetration model that simulates the potential adoption of distributed energy resources (DERs) for residential, commercial, and industrial entities in the United States through 2050. dGen is used primarily as an exploratory tool to determine how different factors will affect DER deployment.

What outputs will dGen provide?

- Annual and cumulative capacity deployed
- Amount of energy generated
- Projected number of systems installed

Who typically uses the outputs from a dGen analysis?

- State and local policymakers, public utility commissions, academics

What information will I need to input into dGen?

- Customer financing structures
- Siting criteria for the DER
- Net metering policies

How can I access dGen?

- dGen is not available for public download, but can be accessed by contacting NREL's Solar Technical Assistance Team. Learn more about the tool at www.nrel.gov/analysis/dgen/.

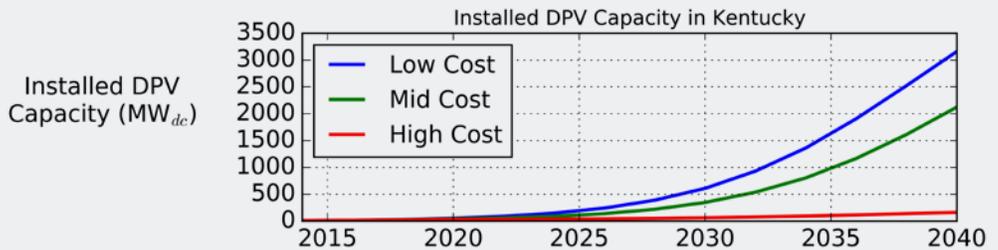
About NREL's Solar Technical Assistance Team

NREL's Solar Technical Assistance Team (STAT) Network works with solar technology and implementation experts to provide timely, unbiased expertise to help policymakers and regulators make informed decisions about solar programs and policies. Eligible government officials can request technical assistance through the STAT for assistance in integrating NREL models and tools into solar analyses.

For more information about solar technical assistance or to apply for assistance, visit www.nrel.gov/technical-assistance/states.html or email stat@nrel.gov.

Example of STAT Technical Assistance: Projections of Distributed PV Adoption in Kentucky Through 2040

The STAT Network ran a dGen analysis to project the adoption of distributed photovoltaics (DPV) in Kentucky through 2040 under three different PV price and electricity cost scenarios. Results showed that projected distributed PV capacity in Kentucky ranges from 162 megawatts (MW) to 3,160 MW, depending on the future price of PV.



NREL offers a variety of analytical models and tools in addition to the ones highlighted here. The Building Energy Optimization (BEopt) model, for example, evaluates residential buildings for cost-optimal, whole-house energy savings options, including both energy efficiency and renewable energy applications. For more information about the full spectrum of NREL models and tools, visit www.nrel.gov/tech_deployment/tools.html.



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