

# REopt: Renewable Energy Integration & Optimization



The REopt™ techno-economic decision support model is used to optimize energy systems for buildings, campuses, communities, and microgrids. REopt recommends an optimal mix of renewable energy, conventional generation, and energy storage technologies to meet cost savings and energy performance goals.

NREL provides expert [analysis services](#) to public and private sector organizations using the full REopt model.

The [REopt Lite web tool](#) offers a subset of the REopt model's capabilities at no cost to the user.

## Featured Publications

[Solar Plus: A Review of the End-User Economics of Solar PV Integration with Storage and Load Control in Residential Buildings](#) *Applied Energy* article

[Impacts of Valuing Resilience on Cost-Optimal PV and Storage Systems for Commercial Buildings](#) *Renewable Energy* article

[REopt: A Platform for Energy System Integration and Optimization](#) NREL technical report

[Renewable Energy Optimization \(REopt\)](#) NREL fact sheet

## REopt Project Successes

REopt analyses have supported decisions that led to more than 260 megawatts (MW) of renewable energy development. Explore our impactful projects in the following areas.

Renewable Energy Screenings

Campus Planning

Microgrids and Resiliency

Energy Storage

Energy and Water Nexus

New Research Areas

# REopt: Renewable Energy Integration & Optimization (/)

(<http://www.nrel.gov>)

## About REopt

The REopt™ model provides concurrent, multiple technology integration and optimization capabilities to help organizations meet their cost savings and energy performance goals. Formulated as a mixed integer linear program, the REopt model recommends an optimally sized mix of renewable energy, conventional generation, and energy storage technologies; estimates the net present value of implementing those technologies; and provides a dispatch strategy for operating the technology mix at maximum economic efficiency.

## REopt Model and Analyses

Under development at NREL since 2007, the REopt model was initially created to identify and prioritize cost-effective renewable energy projects across a portfolio of sites. The model is now also used to optimize the size and operating strategy of microgrids, storage, and energy/water systems. NREL's REopt analyses have supported decisions that led to more than 260 megawatts (MW) of renewable energy development.

Learn more about the REopt development team (</about/team.html>).

Review a list of REopt partners and clients (</about/partners.html>).

## REopt Lite Web Tool

NREL's REopt Lite web tool (</tool>) offers a subset of the full REopt model's capabilities at no cost to the user.

Compare the REopt model and REopt Lite web tool's features and capabilities (</analysis/capabilities-comparison.html>).

## Contact Us

## REopt Projects and Case Studies (</projects/index.html>)

The REopt model can be applied to a variety of energy optimization projects, including:

- Renewable energy screenings
- Campus planning
- Microgrids and resiliency
- Energy storage
- Energy and water nexus
- New research areas.

Email [REopt@nrel.gov](mailto:REopt@nrel.gov) (mailto:REopt@nrel.gov) to learn how NREL's REopt model and analysis services can optimize the energy systems at your site, or to get more information about how the REopt Lite web tool can help you evaluate the economic viability of grid-connected PV and battery storage at your site.