

Robust hybrid microgrid optimization modeling



HOMER Pro

Optimizing microgrid design

HOMER® Pro microgrid software enables optimization of microgrid applications in all sectors—from village power to islanded utilities. Built on the trusted, standard-setting HOMER software, HOMER Pro combines three powerful tools nested in one software product, enabling engineering and economics to work side-by-side and provide informative system insights.

Gain insight, manage costs

At its core, HOMER is a simulation model. It simulates, optimizes, and analyzes your electrical system design using resources, load profiles, and components to deliver the least-cost solution and economic risk-mitigation strategies.

HOMER Pro simulates the operation of a hybrid microgrid for an entire year, in time-steps from one minute to one hour. It looks at all possible combinations of equipment and presents options that you can select to create an optimal system. HOMER simulates hundreds or even thousands of systems in a single model run.

The software lets you ask as many “What if?” questions as you’d like. If you are uncertain about variables in your model, HOMER Pro’s sensitivity analysis feature lets you consider multiple possibilities for almost any variable. You gain insight into “what matters when” before you build, which helps you optimize your system and manage project costs.

Easy and efficient analytics

HOMER Pro makes it easy to compare thousands of possibilities in just a single run, examining all potential combinations of system types and then sorting the systems according to the optimization variable of choice. This allows you to see the impact of variables beyond your control, such as wind speed and fuel costs, and understand how the optimal system changes with these variations.

HOMER® Pro provides insight into the complexities and tradeoffs of designing cost-effective, reliable microgrids or distributed energy resources. HOMER Pro models hybrid systems that combine conventional and renewable energy, storage and load management, driving informed decisions so you can design your systems with confidence.



Simplified optimization

HOMER Pro features our proprietary optimization algorithm that significantly simplifies the design process for identifying least-cost options for microgrids or other distributed generation electrical power systems. HOMER Optimizer™ is a “derivative free” optimization algorithm that was designed specifically to work in HOMER.

Insightful Customer-Facing Proposals

Quickly turn your analysis into a branded proposal that demonstrates cost-savings to your customer. Present key aspects of a proposed system, offer clear cost comparisons, and outline economic value streams. You save time and earn customer trust with a professional proposal.

Customizable design

HOMER Pro can be customized with up to 9 individual modules to meet your specific modeling needs:

- Biomass
- Hydro
- Combined Heat and Power
- Advanced Load
- Advanced Grid
- Hydrogen
- Advanced Storage
- Multi-Year
- MATLAB Link

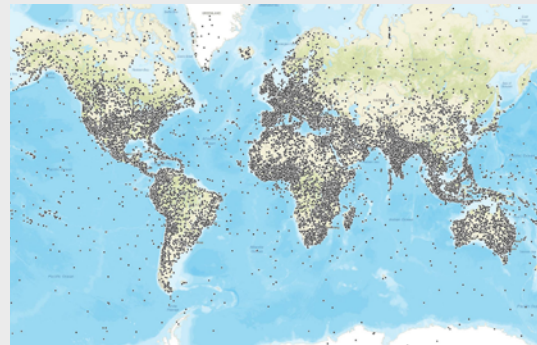


Benefits of using HOMER Pro

- Reduce costs of proposal development by determining early stage project feasibility
- Achieve least-cost design by building out the basic design of a microgrid or distributed energy resource (DER) system
- Mitigate project risk by considering all options and scenarios
- Compare competitive components in various simulated environments
- Identify price points at which different technologies become competitive
- Produce insightful customer-facing proposals that demonstrate system value

About UL Solutions

Originally developed at the National Renewable Energy Laboratory, HOMER (Hybrid Optimization Model for Multiple Energy Resources) sets the global standard for decision making on the optimal mix of resources, system configuration, and capital and operating costs of microgrids. HOMER software has enabled more than 200,000 users worldwide to produce economic feasibility studies, system design, energy insight, and energy cost savings. UL Solutions provides a strong foundation to empower people around the world with tools, services, and information to accelerate the adoption of renewable and distributed energy sources.



Try HOMER Pro for free at homerenergy.com/trypro or contact sales@homerenergy.com to learn more.



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