

Trusted techno-economic analysis for your utility-scale hybrid system



HOMER Front



Solutions

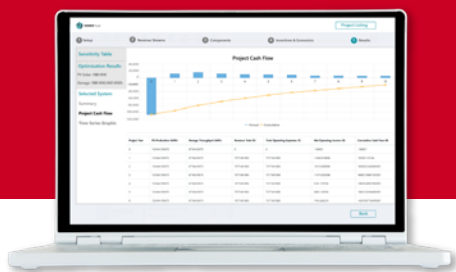
Safety. Science. Transformation.™



Maximize revenue with HOMER® Front hybrid power optimization software

Renewable power plus energy storage is essential to a clean, reliable energy future. But economic success requires optimizing numerous variables – like variable generation, energy markets, power purchase agreements and battery capacity.

HOMER Front provides the solution.



For project development, bid evaluation and due diligence

Built on UL Solutions trusted HOMER hybrid power optimization platform, HOMER Front models the technical and economic performance and dispatch of utility-scale energy storage systems — either independently or along with solar and wind.

You get critical, actionable insights into optimum strategies that maximize the revenue of merchant energy markets, capacity contracts or power purchase agreements. By modeling key aspects of your design, you can determine the winning system.



Size your system

Determine the optimal size of energy storage in utility-scale systems – whether standalone or combined with wind and solar.



Manage battery augmentation

Model battery capacity degradation and augmentation or replacement strategies to minimize ongoing expenses and maximize revenue.



Compare revenue streams

Analyze power purchase agreements, wholesale energy markets, capacity markets and ancillary services. Stack value streams to calculate revenue possibilities.



Perform robust sensitivity analysis

De-risk your internal rate of return (IRR) through sensitivity analysis on key parameters. Screen project sites and evaluate site and system economic viability.

Evaluate multiple revenue streams and storage dispatch strategies

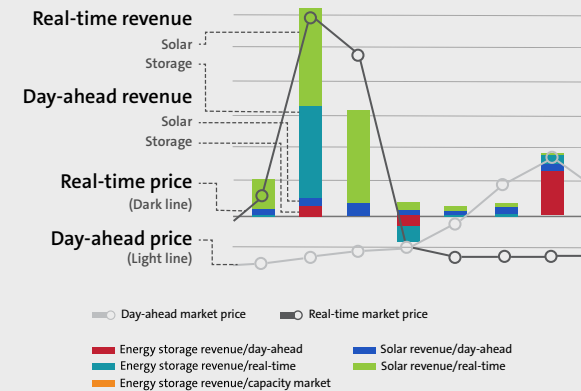
HOMER Front enables you to validate revenue projections from:

- Wholesale energy markets
- Capacity markets
- Power purchase agreements

By analyzing multiple revenue streams and dispatch strategies, you can more accurately size your system and plan operation to deliver optimal return on investment while reliably serving load requirements.



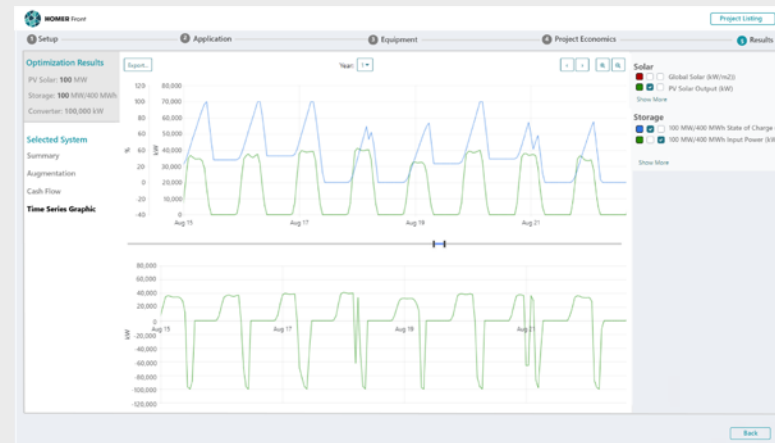
The results graph shows revenue stacking and wholesale energy price.



Mitigate risk with advanced energy storage modeling

HOMER Front provides robust storage modeling and sensitivity analysis to assess the impact of energy storage degradation and multiple dispatch and augmentation strategies on financial performance. Time series graphics show easy-to-understand sensitivity analysis, empowering you to:

- Optimize multiple augmentation strategies.
- Model degradation based on warranted values and storage usage.
- Assess the system's ability to meet off-take agreement requirements consistently.



Easy-to-understand time series graphics show sensitivity analysis of storage variables.



*Get the clear advantage of
HOMER Front*

*Choose to model your projects
accurately with a license for HOMER
Front web-based software, or
work with our respected team of
renewable energy experts and
increase speed to completion
with a project-specific feasibility
study or full project evaluation.*



Powerful performance beyond compare

Make hybrid power system decisions with confidence

Rely on accurate, confirmable analysis of multiple inputs of energy resources, markets, and dispatch and augmentation strategies.

Easily export data with a single click and share across companies without exposing intellectual property related to the project.

A trusted third-party model gives confidence to partnering companies, financiers and customers.

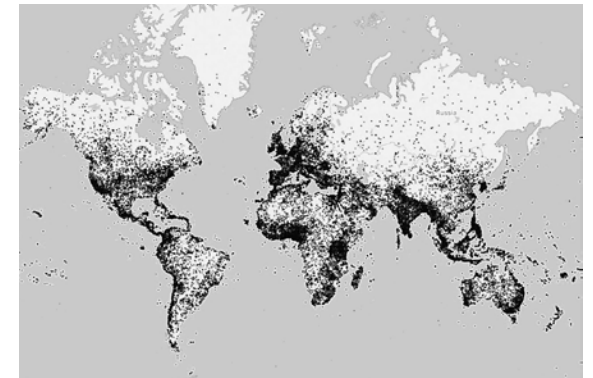
Save time with powerful data integration through Helioscope's application programming interface (API); import PvSyst and wind production data, resource data for solar and temperature, and multiple formats of price data.

Put the power of UL Solutions HOMER optimization solutions to work for you

Originally developed at the National Renewable Energy Laboratory, UL Solutions HOMER software solutions optimize the value of your hybrid power systems and energy storage – whether your system is standalone, connected to the grid, behind-the-meter or utility-scale.

UL Solutions enables you to leverage our long-standing expertise in renewable energy and trusted independent engineering. We offer full project support, including market and regulatory assessment, project and site evaluation, technical design and analysis.

You gain unmatched advanced energy storage modeling along with UL's 25 years of experience modeling hybrid power systems.



Our software has performed >250,000 project calculations in 190+ countries.

Learn more at [UL.com/HOMERsoftware](https://www.ul.com/HOMERsoftware).