



Integrating renewable & conventional power

Increase renewables *without compromising reliability*

HOMER modeling software simplifies complex choices for energy planners. As utilities, industries, cities, and other customers strive to incorporate more renewable power, they are recognizing the challenge of providing cost-effective and reliable energy with intermittent and variable resources. HOMER allows planners to determine the optimal mix of system resources according to criteria they choose.

Maximize renewables with microgrids

Microgrids can be as simple as a diesel generator hard-wired to a load. Complex microgrids use distributed renewables, storage, and load management to deliver power that is potentially cleaner and more efficient than conventional power sources. If connected to the central grid, microgrids can add reliability through redundancy and load leveling. HOMER is world's leading tool for designing complex microgrids.

How does HOMER work?

HOMER simulates thousands of different user-defined systems for every hour of the year. It then ranks them by financial performance and technical feasibility. HOMER's built-in sensitivity analyses also allows planners to measure the impact of inputs such as changing fuel prices, carbon costs, wind speeds or other variables.

Who's using HOMER?

- Military
- Telecoms
- Island governments
- Municipalities
- Universities
- Oil & Gas
- Mining
- Hospitals
- Ecotourism

What resources can HOMER model?

- Solar photovoltaics
- Wind Turbines
- Biomass
- Diesel Engines
- Microturbines
- Electrolyzers
- Batteries
- Fuel Cells
- Combined Heat & Power
- Flywheels
- Load management



“Microgrids serve single on or off-grid facilities, industrial complexes, campuses, municipalities and islands. HOMER is the optimal tool for microgrid design.”

Peter Lilienthal, CEO, HOMER Energy

HOMER Energy Products & Services

Software

Over 50,000 people are using HOMER energy modeling software with over 1,000 new users each month. HOMER software is continuously updated with new features. The company also creates customized modules according to client specifications.

Training

HOMER Energy provides online training in hybrid renewable system design using the HOMER software via webinars. We also design customized onsite training programs according to client specifications.

Consulting

HOMER Energy provides microgrid and hybrid power system consulting services to clients in industry, government and the military. We provide assistance with economic analysis, system design and technology choices.

Selected Projects

City of San Diego: Microgrid design for emergency services

Bermuda Electric Light Company: Island power plan

Beacon Power: Flywheels in hybrid system design

US Agency for International Development: Rural health clinics

Alaska Energy Authority: Village wind-diesel

Military contractor: Off-grid military microgrids

Powercorp: Remote research stations; off-grid towns

NREL: Energy Development for Island Nations

Case Study

Powercorp, in Western Australia, uses HOMER and cutting edge storage technologies such as flywheels, to achieve unusually high penetrations of renewable energy. Serving off-grid communities and remote locations such as Antarctica (right), Powercorp relies on HOMER to project capital and operating expenses, to assess the economic feasibility of a system and to optimize system design.

Why our clients choose HOMER for hybrid system design:

- Economic optimization
- Increased RE penetration
- Complex storage challenges
- Mission-critical power supply
- Robust off-grid capabilities

