HOMER Pro

The **HOMER Pro®** microgrid software by HOMER Energy is the global standard for optimizing microgrid design in all sectors, from village power and island utilities to grid-connected campuses and military bases. Originally developed at the National Renewable Energy Laboratory, and enhanced and distributed by HOMER Energy, HOMER (Hybrid Optimization Model for Multiple Energy Resources) nests three powerful tools in one software product, so that engineering and economics work side by side.

Features:

- Simulation

At its core, HOMER is a simulation model. It will attempt to simulate a viable system for all possible combinations of the equipment that you wish to consider. Depending on how you set up your problem, HOMER may simulate hundreds or even thousands of systems. HOMER simulates the operation of a hybrid microgrid for an entire year, in time steps from one minute to one hour.

- Optimization

HOMER examines all possible combinations of system types in a single run, and then sorts the systems according to the optimization variable of choice. HOMER Pro features our new 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 proprietary "derivative free" optimization algorithm that was designed specifically to work in HOMER.

- Sensitivity Analysis

HOMER lets you ask as many "What if?" questions as you'd like, because you cannot control all aspects of a system, and you cannot know the importance of a particular variable or option without running hundreds or thousands of simulations and comparing the results. HOMER makes it easy to compare thousands of possibilities in a single run. This allows you to see the impact of variables that are beyond your control, such as wind speed, fuel costs, etc, and understand how the optimal system changes with these variations.