



HOMER Modeling Workshop

One Day Training Workshop-content may be adjusted to meet participants' needs.

Goal and Objective

The course will familiarize participants with HOMER's user interface and the simulation-optimization-sensitivity analysis paradigm to allow them to begin using HOMER independently for small systems. The day will also include specific advanced modeling capabilities, and can be adjusted to cover any advanced topics desired. It can also include a facilitated session for users to develop their own HOMER models with the support of a Certified HOMER Expert and Trainer.

By the end of the Foundations portion of the day, participants will have simulated a diesel generator system with and without batteries for an isolated off-grid application, optimized the system design by adding solar panels, explored the sensitivity of the optimal system design to interest rate and diesel fuel cost assumptions, and explored 100% renewable systems.

Logistics

Participants should have HOMER Pro already installed on their Windows computer with an active license. If you need help installing the HOMER software, please email training@homerenergy.com before the course begins. The day will also include breaks that will be scheduled in conversation with the organizer.

Day One – Feb. 1

Setup and logistics: 8:30 – 9:00

During this time, a HOMER Expert will be available to address installation questions and will get setup for the workshop.

Foundations I: 9:00 – 11:00

Introduction to HOMER (Presentation)

Simulation and Optimization (Demonstration and Exercises)

- Model a small community system
- Simulate a diesel-only system
- Lower costs by adding batteries
- Build a hybrid mini-grid with solar photovoltaics
- Identify diesel, fuel-saver, hybrid, and 100% renewable designs

Sensitivity Analysis (Demonstration and Exercises)

- Sensitivity analysis on fuel price (one-dimensional)
- Sensitivity analysis on capacity shortage and fuel price (two-dimensional)
- Determine the payback and internal rate of return (IRR) for a design
- Exporting and sharing your preliminary findings

Foundations II: 11:00 – 13:00

Refining your design (Demonstration and Exercises)



- Develop a customized load based on limited data
- Develop a customized load based on measured data
- Size a diesel generator
- Design a system with specific equipment
- Exporting and sharing your design

Day Two – Feb. 2

Foundations III: 14:00 – 16:00

Interconnected mini-grid design (Demonstration and Exercise)

- Net metered PV
- Feed in tariffs
- PV+Storage for interconnected mini-grids

Review: 16:00 – 16:30

Review of materials covered

- Question-and-answer session to answer any remaining questions
- HOMER Certified Trainer will review key concepts

The agenda will include coffee breaks and pauses based on needs of participants and organizer.