

Solar + Storage + Power

Off-Grid Training Course for the Shonto Community

Off-Grid Solutions

General Information

Description

The Solar + Storage + Power Off-Grid Training Course is designed to help students understand the basics of solar and battery storage technology. This course provides not only a framework for understanding how solar can be used to create electricity, but also a hands-on experience where students can gain knowledge and skills in off-grid solar/photovoltaics (PV) electric systems and best practices for living in an off-grid situation.

This 2 ½ day course will include a combination of class lectures and discussions, group projects and “hands-on” work. Lectures will provide an understanding of the basics of PV, understanding loads, equipment and tools needed for an off-grid electric system, knowing system limits, utilizing opportunity loads and trouble-shooting. Students will break into smaller groups for the Hands-on unit and, using a training kit, they will help mount, wire, program and commission a 48V/3000VA or 5000VA off-grid solar electric system.

This course is an excellent opportunity for both the end-user and the professional to learn about Solar Electricity, PV Design, Off-Grid Living, and a variety of hands-on skills.

Expectations and Goals

By the end of the course students will have a basic understanding of how solar/photovoltaics (PV) electric systems work, components needed to build an off-grid system, and an understanding of how to troubleshoot system issues. Participants will also have a working knowledge of how to safely perform simple wiring and programming, as well as commissioning and decommissioning a system for a small, efficient home.

Prerequisites

There are no prerequisites for this course. However, any knowledge students already have in electrical work or renewable energy systems will be valuable to the entire class. Students who are new to these skills will have the opportunity to learn them in a hands-on environment.

Course Syllabus:

- Lecture Unit:**
- Solar Basics
 - Safety Briefing
 - Equipment Overview
 - Understanding Your Loads
 - System Monitoring
 - Wire & Over current protection
 - Series and Paralleling of Batteries and PV Modules
 - Trouble Shooting
 - Off-Grid Tips
-

- Hands-On Unit:**
- Mounting Equipment
 - System Wiring Overview
 - Installing Monitoring Cables
 - Battery & PV Cable Fabrication
 - Connecting Batteries
 - Connecting PV Cables
 - Commissioning
 - Connecting & Running a Generator
 - Programming
 - Testing
 - Troubleshooting
 - Decommissioning
-



Additional Information and Resources

Victron Professional

Victron Professional is a wealth of online information and includes a wide variety of topics. Each course concludes with a test and, upon passing successfully, a certificate of completion is awarded.

[Victron Energy - Victron Professional](#)