Collective Solutions

Workshop Syllabus

Solar Electric (PV) Systems: Design & Construction

Number of Participants: 10-20 people

Skill Level: Intermediate/ Advanced

Total Workshop Length: 3-5 Days

Classroom: 1-2 Day

Project Installation: 2-3 Days

Required Materials (subject to vary):
Solar panels, batteries, charge controller, DC lighting, wiring, mounting brackets, DC disconnect, secure location for panels, mounting location for inverter, box for batteries, combiner box, AC disconnect, inverter

Participants: Note pad, pen, general construction tools (if they own them)

Host Organization: Classroom, lunch, and above materials to be determined between CS and Host Organization

Average Cost of Project: Depending on size and type of system: $1,500 - $4,500* (*All prices are in US Dollars)

Host: Minimum 30% to be paid for by host organization

Participant Cost: Free

Objective: To learn the basic sequences of installing and wiring a solar electric (PV) system for domestic use.

Workshop Description:
Solar energy is one of the most well known forms of alternative power. In many places in the world, sunlight is the most abundant resource available. Collective Solutions offers this workshop to break down the complexities of installing and wiring a solar (photovoltaic (PV)) system. PV arrays can be large and complex but can also be as simple as wiring a single solar panel to a car battery. The reaction that occurs within a solar panel produces direct current (DC) electricity, which can be used in many places in the world to operate lights and appliances. Systems that require large amounts of generated electricity typically use an inverter to convert the direct current into alternating current (AC) electricity, making it compatible with standard grid infrastructure. This workshop will examine the design and construction of simple photovoltaic systems. There will be a classroom review to cover 2 types of systems: those that use only DC electricity and those that convert DC into AC electricity. The advantages and disadvantages of solar panels will be discussed as well as system repair and maintenance. The following days will be spent installing and wiring a site-specific photovoltaic system.