

## *Yestermorrow Design/Build School*

### Solar Electric Design and Installation

#### **Course Description:**

This intensive course will provide homeowners and aspiring professionals with the broad knowledge needed to make informed decisions regarding the design and installation of a solar electric system, as well as the skills necessary to be actively involved in the system's implementation. The course will start by introducing the fundamentals of photovoltaic technology, the types of solar electric systems and components, and basic elements of site evaluation and design. Students will tour several residential PV systems, discuss incentive programs and code compliance, and perform financial analysis. Participants will complete a hands-on installation of a small solar electric system on a mock roof. And finally, instructors will help course participants size and select equipment for their own solar electric systems. Each student will leave the class with the knowledge necessary to assist a licensed solar professional in designing and installing an appropriate solar electric system for their home.

#### **Class Details:**

##### **Day 1 (Monday)**

Intro to Solar Technology

- System Types
- Selection Criteria

Safety

- Tool Usage
- Electrical Hazards
- Safety harness demo

## Basics of Electricity

- Series/Parallel Wiring Exercises

## Solar Fundamentals

- Understanding the effects of shading, tilt, orientation, heat, azimuths, environmental factors, etc.
- Hands on module testing (if module available at Yestermorrow from site)

## **Day 2 (Tuesday)**

Question/Answer—Review from Day 1

## Grid Tied Systems

- Components
- Sizing (Array and Inverter)
- Show New Orleans Enphase system online monitoring

On line string sizing calculators

## PV Watts

## Stand Alone Systems

- Components
- Load Estimation
- Battery Sizing
- Controller and Inverter Sizing

Other efficiency, future, load concerns/factors

## Site Surveying

- Shading Analysis
- Solar Pathfinder/Solmetric hands on

System layout and mounting

Site visit (Yestermorrow and job site)

(Possible Evening Financial Analysis and Incentive Programs, Permitting and Code Compliance)

Consideration/design of individual projects

### **Day 3 (Wednesday)**

Install at job site

### **Day 4 (Thursday)**

Install at job site

### **Day 5 (Friday)**

Install wrap up and review of all subjects, individual projects review and assistance