

## CLASS LAB PROJECT

**Project Name:** Off-Grid Photovoltaic System Design & Installation

**Project Description:**

We want to setup an off-grid system on the roof next to the Conex box at the Sierra College Roseville Gateway campus. You will complete the site assessment, design and installation of a working off-grid photovoltaic system, which will power specific loads listed below. You will use the site assessment and 4 off-grid system design sheets from the CD-ROM in your text book. Part of your work will be in groups and the rest will be individual.

**Project Specifications:**

1. Do a preliminary, as well as a physical Site Analysis of the location: Roof next to the Conex box at the Sierra College Roseville Gateway campus (using the Site Survey Form on the CD-ROM from your text book) – with your groups use the Solmetric SunEye to determine the available solar resource – and note your findings (you don't need to print out the report).
2. Use the following Load Analysis information: 2 30 Watt DC Bulbs, 1 36 Watt water pump.
3. Complete the 4 off-grid system design sheets from the book CD-ROM (Excel Spreadsheet).
4. Select the system components from what we have available (and lookup their specs):
  - Modules: Kyocera KD135GX
  - Charge Controller: Morningstar TriStar
  - Inverter: Outback VFX3524
  - Batteries: MK 8G30H-DEKA
  - Other components as needed
5. Create a simple site elevation drawing and single line drawing for this system (hand drawn documents are acceptable – see Pg. 81 and 358-359 in Text).
6. Install the system in your groups. This will be a mobile system, except for the modules – we can keep the components in the rolling cart.
7. Once the project is complete, turn in all design sheets and info above.

**Due Date:** 5/13/12

**Note:** This is a project that you may present to an industry interviewer. The better job you do and the better it looks, the better impression you can make! Therefore the more \$ you can ask for when they hire you!!!