PV 203: Intro to Battery-Based Solar Electric Design

Contact Hours: 40 PHD
Louisiana Solar and Energy Lab

Course Description:
Solar energy systems with energy storage are an important segment of the industry. This course builds a foundation for understanding many battery-based applications, in which the complexity far exceeds that of a grid-direct PV system. Load analysis is addressed along with other critical design criteria such as battery bank design, equipment options, and electrical integration of system components. Component options are covered in detail, including batteries, charge controllers, and battery-based inverters. Different battery chemistries, associated pros and cons, and cost comparisons are investigated along with safety and maintenance considerations unique to battery-based PV systems.

PREREQUISITE COURSE: Before participating in the PV 203 course, students MUST complete PV101.

Who can attend?
This course is focused on technicians, field managers, renewable energy employees, engineers and other people interested in enhancing their understanding of renewable energy. The graduate trainee should be able to acquire an entry-level in the solar industry as an installer, designer, site analyst, field manager or technician or other related entry level position.

Topics:

- Components and System Types
- Battery Basics
- Battery Charging
- Electrical Integration
- Load Analysis
- Series Parallel and Battery Banking Sizing
- Battery Based Inverter Basics
- Commissioning

What you get from this Course:

- Recognize uses for energy storage and define terminology in energy storage
- Identify battery types for PV applications. Recognize demand and PV production curves.
- Distinguish different battery technologies
- List ways to compare battery technologies. Categorize benefits and limitations of battery types
- Compare valve regulated (VRLA) and flooded lead-acid (FLA) battery types
- Define capacity and voltage of different battery configurations
- Quantify impact of depth of discharge and temperature on cycle life
- Determine the state of charge of batteries. List general installation and maintenance requirements
- Describe the functions of a battery management system
- Classify uses and types of battery-based inverters
- Describe the importance of sine wave AC output
- Identify DC and AC connections to battery-based inverters

How can I attend this course?

For more information about this course, please contact:

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Click on this link to request a **scholarship** for this course:

https://forms.office.com/r/uxZnsPYWgU

Energy Efficiency and Sustainability Professional Development Courses Intake Form

Use this QR code to fill out the application for enrollment