

NABCEP Continuing Education CONFERENCE



Hudson Valley Community College's TEC-SMART, Malta, NY

*First-ever Continuing Education Conference for
NABCEP Certified Installers and Technical Sales Professionals.*

Program Schedule Friday - March 30, 2012



	TEC-SMART Lobby	Auditorium	Room 122	Room 123	Room 201	Room 202	Multi- Purpose Room	Solar Lab	Computer Lab	Hyatt Place
	Exhibitor Setup									
12:15 PM	Buses Start									
1:00 PM	Registration and Sign In									
1:30 PM	Welcome: Patrick O'Shei, NYSERDA /Conference Overview (Auditorium)									
2:00 PM			Rigging and Crane Signals (P. Cooke)	Sunny Boy 1 (SMA)	Materials Selection for Off-Grid Installs (Ameresco)	Lead-Acid Batteries in RE Systems (Trojan Battery)	Single Phase Inverter Training (Solectria)	Solar Mounting Structures (Unirac)	Power-One Inverter Technology (Power-One)	
5:00- 7:00 PM	Reception									
6:00 PM	Buses Start									

Session Descriptions



Friday - March 30

Lifting Your Awareness to Rigging Safety

Peter Cooke, Columbus McKinnon Corporation
Friday, March 30
2p - 5p
Room 122
3 CEU's

Do you know how to select, inspect, and use slings and rigging hardware safely? Find out what it takes to become a qualified rigger and what you need to know to become OSHA and ASME compliant. Hands on rigging inspection will be performed by attendees.

Sunny Boy 1 Overview - Traditional and Innovative/Hybrid Residential PV System

Ben Castillo, SMA America, LLC
Friday, March 30
2p - 5p
Room 123
3 CEU's

Learn how to utilize SMA Products in both traditional and hybrid systems using string inverters and the new Sunny Boy 240 Micro Inverters to create the perfect solution for any project.

Materials Selection and Design of PV Arrays for Off Grid Installations

Don Warfield, Ameresco Solar
Friday, March 30
2p - 5p
Room 201
3 CEU's

This course will consist of a discussion of the differences (both hardware and design) between off-grid PV systems and current grid-tied systems. Includes hands-on design activity.

Using Lead-Acid Batteries in Renewable Energy Systems

John DeBoever, Trojan Battery Company
Friday, March 30
2p - 5p
Room 202
3 CEU's

This course will cover the basics and importance of using deep-cycle batteries in off-grid residential and industrial applications with photovoltaic and other renewable energy sources.

Single Phase Inverter Training

Brad Sherman & Eric Every, Sollectria
Friday, March 30
2p - 5p
Multipurpose Room
2 CEU's

Interested in learning about single phase systems and inverters? This training will be an in depth training on the Sollectria Renewables PVI 1800 through PVI 7500 single-phase residential and small commercial grid-tied PV inverters. This training includes installation details, string sizing, temperature effects on PV array voltages, AC/DC connections, wiring needs, data monitoring, available options and how to use the inverters in parallel for single-phase PV installations ranging from 1.8kW and above.

Solar Mounting Structures Design Guidance

Andy Davidson, Unirac
Friday, March 30
2p - 5p
Solar Lab
3 CEU's

In this course, we'll teach PV mounting structure design guidance, product application & configuration as well as prescriptive engineering methodologies, plus how to navigate codes, standards and guidelines, and what you should expect from a racking company. Lastly, we'll unveil our anti-permit-hassle, code compliant, and fast installing residential racking system.

Power-One Inverter Technology and Applications

Jim Egan, Power-One
Friday, March 30
2p - 5p
Computer Lab
3 CEU's

This course provides the knowledge needed for PV design engineers, contractors, installers, and product managers to specify Power-One Aurora String and Central Inverters safely, accurately, and efficiently into their PV and Wind System designs. Attendees will learn about the entire Aurora String and Central Inverter product lines and unique features such as dual MPPT channels, wide range of field configurable settings and Power-One's superior engineering technology.

Program Schedule **Saturday - March 31, 2012**



	TEC-SMART Lobby	Auditorium	Room 122	Room 123	Room 201	Room 202	Multi- Purpose Room	Solar Lab	Computer Lab	Hyatt Place
7:45 AM										Buses Start
8:30 AM	Opening Plenary (Auditorium)									
9:00 AM			Quick Mount PV: Roofing Best Practices (Quick Mount) <i>cont'd</i>	Microinverter System (Enphase) <i>cont'd</i>	Magnum Energy Product Installation and Training (Magnum) <i>cont'd</i>	Economics of PV (OnGrid Solar) <i>cont'd</i>	2011 NEC Requirements for PV (R. Mayfield) <i>cont'd</i>	Solar 201: PV Installation (SolarWorld) <i>cont'd</i>	Intro. & Installation of the SolarEdge System (SolarEdge) <i>cont'd</i>	
10:30 AM	Break and Exhibits									
11:00 AM			Quick Mount PV: Roofing Best Practices (Quick Mount)	Microinverter System (Enphase) <i>cont'd</i>	Magnum Energy Product Installation and Training (Magnum)	Economics of PV (OnGrid Solar) <i>cont'd</i>	2011 NEC Requirements for PV (R. Mayfield) <i>cont'd</i>	Solar 201: PV Installation (SolarWorld) <i>cont'd</i>	Intro. & Installation of the SolarEdge System (SolarEdge)	
12:30 PM	Lunch and Exhibits									
1:30 PM			Sunny Island 1 (SMA) <i>cont'd</i>	Microinverter System (Enphase) <i>cont'd</i>	Roofs as PV System Platforms (NRCA, RISE) <i>cont'd</i>	Economics of PV (OnGrid Solar) <i>cont'd</i>	2011 NEC Requirements for PV (R. Mayfield) <i>cont'd</i>	Solar 201: PV Installation (SolarWorld) <i>cont'd</i>	Trinamount III: Install Training (Trina) <i>cont'd</i>	
3:00 PM	Break and Exhibits									
3:30 PM			Sunny Island 1 (SMA)	Microinverter System (Enphase)	Roofs as PV System Platforms (NRCA, RISE)	Economics of PV (OnGrid Solar)	2011 NEC Requirements for PV (R. Mayfield)	Solar 201: PV Installation (SolarWorld)	Trinamount III: Install Training (Trina)	
5:00 PM	Buses Start									
5:30 PM										Reception
6:00 PM										Banquet

2011 NEC Requirements for PV Systems

Ryan Mayfield, Renewable Energy Associates, LLC
Saturday, March 31
9a - 5p
Multipurpose Room
6 CEU's

Designed specifically for PV professionals, this course will cover the major Code articles affecting PV installations, focusing on the 2011 NEC. Upon successful completion of this course, participants will have the ability to recognize and implement new Code requirements for PV systems.

Enphase Microinverter System - Design, Installation, and Data Monitoring

Peter Lum & Jarett Skeffington, Enphase Energy
Saturday, March 31
9a - 5p
Room 123
6 CEU's

Enphase will offer 6 hours of comprehensive training covering Enphase's systems and technology, System Design and Installation, System Activation, Registration and Monitoring, and Basic and Advanced Communications design and installation.

Magnum Energy Product Installation and Training

Alan Santos-Buch, Magnum Energy, Inc.
Saturday, March 31
9a - 12:30p
Room 201
3 CEU's

This is an overview of and training for off grid installations using Magnum Energy renewable energy products.

Quick Mount PV: Solar Roofing Best Practices

Johan Alfsen & Jeff Spies, Quick Mount PV
Saturday, March 31
9a - 12:30p
Room 122
3 CEU's

Maintaining roof warranties and installing quality products can protect your installation and also save you time on the roof. This class will cover best practices for roof penetrations, solar mounting and flashing systems.

Economics of PV: Making the Financial Case

Andy Black, OnGrid Solar
Saturday, March 31
9a - 5p
Room 202
6 CEU's

This workshop provides detailed study of Commercial & Residential PV Economic Analysis including system costs (base pricing plus 'adders' for various complications), incentives (rebates, PBIs, SRECs, FITs, state & federal tax credits and depreciation), electric rate structures (tiers, time-of-use, and demand), and system performance variables (tilt, orientation, shading, temperature, and site condition variations from ideal) as inputs to five financial analysis methods including Simple Payback, Total Lifecycle Payback, ROI, Internal Rate of Return (IRR), Modified IRR, and Appraisal Resale Value. The purpose is to provide support and strength to sales proposals. Examples will cover NY, MA, NJ, CT, OH, CO, AZ, TX, CA, HI, FL, Ontario, and other popular locations.

Introduction and Installation of the SolarEdge System

Jeff Laughy, SolarEdge
Saturday, March 31
9a - 12:30p
3 CEU's

The introduction and installation of the SolarEdge System course includes the following subjects: system overview, product line review, safety features, monitoring server review, installation training, basic system debugging, NEC compliance, and service and diagnostic tools review.

Solar 201: PV Installation

Randy Castellanos, SolarWorld
Saturday, March 31
9a - 5p
Solar Lab
6 CEU's

The course involves classroom presentation as well as hands-on installation on a mock training roof. During the hands-on portion, participants will complete a site survey and install a SolarWorld Sunkits system on a demonstration roof. The installation will include making the necessary connections to a grid tied inverter, AC disconnect, and a service panel.

Sunny Island 1 Overview - Grid Tied Battery Backup Systems with an Intro to the Off Grid Multi-Cluster

Greg Smith, SMA America, LLC
Saturday, March 31
1:30p - 5p
Room 122
3 CEU's

This course provides an in-depth understanding of the Sunny Island battery backup inverter, its response to a grid failure and its role in a grid-tied backup system. Topics include battery management, battery types, generator types, system management and additional system components, system design. Hands-on training provides reinforcement of training concepts.

Roofs as PV System Platforms: Design and Installation Guidelines

Jim Kirby, (NRCA), John Schehl (RISE)
Saturday, March 31
1:30p - 5p
Room 201
3 CEU's

This session provides an overview of the U.S. roofing industry's best practices and industry experts' recommendations for incorporating PV systems into roof assemblies. Topics covered include basics of low- and steep-slope roof assemblies; related building codes; equipment attachment and flashing details; roof system enhancements and equivalent service life; roofing safety; and, manufacturer warranties.

Trinamount III: Design and Installation Training

Jon Haeme, Trina Solar
Saturday, March 31
1:30p - 5p
Computer Lab
3 CEU's

This course will cover the design and installation of Trina Solar's Zep compatible module with the TMIII ballasted mounting system for flat commercial roofs. We will mix classroom presentations with a hands on demo of TMIII. The student will learn to identify and install the key components of the tool free, auto-grounding TMIII system. We will cover how to evaluate a location for wind loads, orientation, proper spacing and layout. We will discuss typical problems encountered on flat roofs and practical solutions to address them.

Program Schedule Sunday - April 1, 2012



	TEC-SMART Lobby	Auditorium	Room 122	Room 123	Room 201	Room 202	Multi- Purpose Room	Solar Lab	Computer Lab	Hyatt Place Buses Start
7:45 AM										
8:30 AM				OutBack Radian System (OutBack Power) <small>cont'd</small>	Three Phase Central Inverters (Solectria) <small>cont'd</small>	Structural Design of Mounting Systems (Schletter) <small>cont'd</small>	2011 NEC Requirements for PV (R. Mayfield) <small>cont'd</small>	Zep Advanced Design and Installations (ZEP) <small>cont'd</small>	TriStar MPPT Solar Controller (Morningstar) <small>cont'd</small>	
10:00 AM	Break and Exhibits									
10:30 AM				OutBack Radian System (OutBack Power) <small>cont'd</small>	Three Phase Central Inverters (Solectria) <small>cont'd</small>	Structural Design of Mounting Systems (Schletter)	2011 NEC Requirements for PV (R. Mayfield) <small>cont'd</small>	Zep Advanced Design and Installations (ZEP) <small>cont'd</small>	TriStar MPPT Solar Controller (Morningstar)	
12:00 PM	Lunch and Exhibits									
12:45 PM				OutBack Radian System (OutBack Power) <small>cont'd</small>	Roof Hazards and Fall Protection (M. Pinke) <small>cont'd</small>	Intro. & Install. of the SolarEdge System (SolarEdge) <small>cont'd</small>	2011 NEC Requirements for PV (R. Mayfield) <small>cont'd</small>	Zep Advanced Design and Installations (ZEP) <small>cont'd</small>		
2:15 PM	Break and Exhibits									
2:30 PM				OutBack Radian System (OutBack Power)	Roof Hazards and Fall Protection (M. Pinke)	Intro. & Install. of the SolarEdge System (SolarEdge)	2011 NEC Requirements for PV (R. Mayfield)	Zep Advanced Design and Installations (ZEP)		
4:00 PM	Conference Ends and Buses Start									

Session Descriptions



Sunday - April 1

2011 NEC Requirements for PV Systems

Ryan Mayfield, Renewable Energy Associates, LLC
Sunday, April 1
8:30a - 4p
Multipurpose Room
6 CEU's

Designed specifically for PV professionals, this course will cover the major Code articles affecting PV installations, focusing on the 2011 NEC. Upon successful completion of this course, participants will have the ability to recognize and implement new Code requirements for PV systems.

OutBack Radian Installing and System Design

Steve Higgins, OutBack Power
Sunday, April 1
8:30a - 4p
Room 123
6 CEU's

At this course we will be doing a mockup Radian installation with all three GSLC Combination of boxes.

Structural Design of Mounting Systems for Solar PV Installation

Wolfgang Fritz, Schletter, Inc.
Sunday, April 1
8:30a - 12p
Room 202
3 CEU's

This seminar addresses the structural aspects of PV system design for both roof mounted as well as ground mounted installations. Applicable building codes and standards will be examined and loads acting on the solar array will be discussed. Design examples will be provided so attendees can follow the design process. Special design considerations and detailing of systems will also be explored. A hands-on portion will follow the classroom-style instruction to reinforce the learned information.

Three-Phase Central Inverter Training

Brad Sherman & Eric Every, Solectria
Sunday, April 1
8:30a - 12p
Room 201
3 CEU's

Solectria Renewables' PVI inverters ranging from 10-95 kW are the most widely used three-phase commercial inverters in the industry. This commercial training will review the PVI 10/13/15/60/82/95KW inverters including design & features; the ease of mounting and installation; AC/DC electrical connections; string sizing and installation site examples. We will also discuss communications via SolrenView web-based monitoring.

Morningstar TriStar MPPT Solar Controller Workshop

Brad Berwald, Morningstar Corporation
Sunday, April 1
8:30a - 12p
Computer Lab
3 CEU's

This presentation will cover the detailed configuration, installation and use of Morningstar's TriStar family of MPPT controllers. We will also review the remote management and internet data acquisition functions of the products. This course will utilize the TEC-SMART computer lab for hands-on demonstrations.

Zep System II: Advanced Design and Installation (Hands-on)

Daniel East & Duncan Cleminshaw, Zep Solar
Sunday, April 1
8:30a - 4p
Solar Lab
6 CEU's

In a mix of fast-paced lab and lecture, students learn to identify and install key components of the Zep Solar platform including Zep-framed modules, Leveling Feet, Interlocks, Array Skirts, Ground Zeps, Wire Clips, Universal Box Brackets, and more on a mock roof. Using Zep's online Design Tool, the Zepulator™, students will learn the process to create Zep Solar layouts, produce comprehensive Bills of Material and engineering calcs for both standard and advanced designs. Students will learn to tune and troubleshoot installation challenges quickly and easily including irregular roof surfaces, non-standard rafter spacing, attachment points that coincide with module intersections, thermal expansion joints, slight variations in module dimensions, and more by applying Best Practices learned in class.

Roof Hazards and Fall Protection

Melissa Pinke, HVCC
Sunday, April 1
12:45p - 4p
Room 201
3 CEU's

An overview of typical safety hazards working on or around above-ground work, how to recognize these hazards, and how to use fall protection and other safety measures to reduce injuries and maintain productivity.

Introduction and Installation of the SolarEdge System

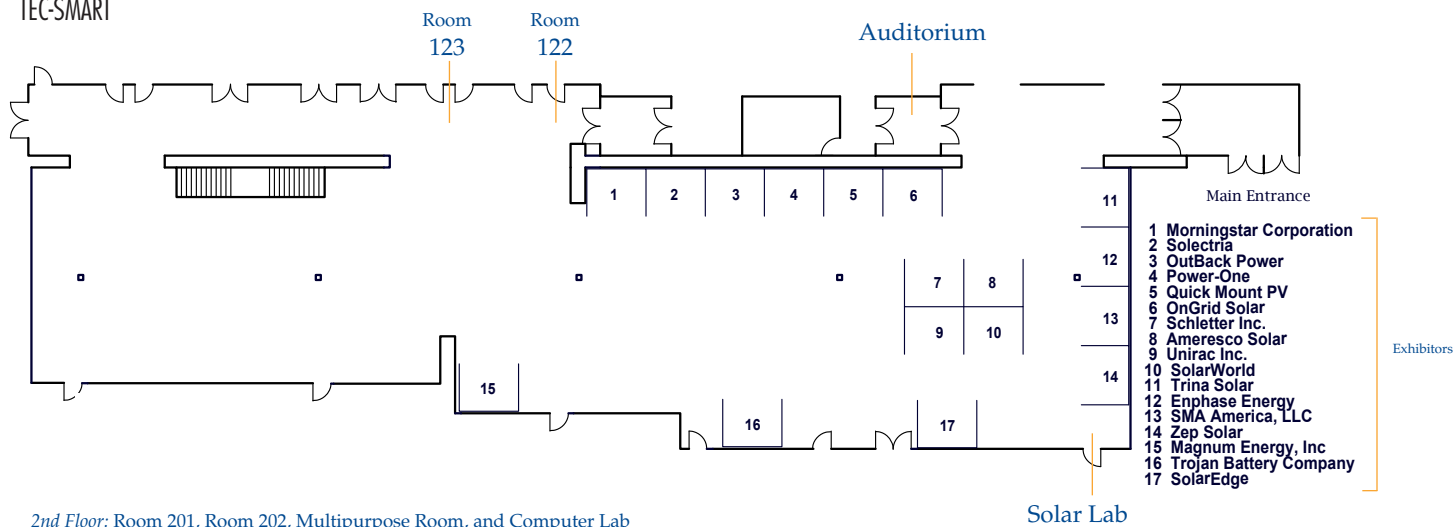
Jeff Laughy, SolarEdge
Sunday, April 1
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The introduction and installation of the SolarEdge System course includes the following subjects: system overview, product line review, safety features, monitoring server review, installation training, basic system debugging, NEC compliance, and service and diagnostic tools review.

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TEC-SMART



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