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Energy Efficiency Class Details & Registration

This class is full. Submit the form below to be added to a waiting list. A confirmation with your place in the waiting list will be e-mailed to you.

Program Title	Photovoltaic (PV) Site Analysis and System Sizing [Register]		
Time, Location	December 4 (Tuesday, 9:00 am to 5:00 pm) Stockton--ETC		
Also Offered	n/a		
Description	<p>Please note this class is designed as an intermediate class for anyone interested in understanding the specific issues associated with PV site analysis and system sizing. This class will not cover PV technologies and applications, costs and incentives, net metering basics, etc. Participants will be expected to have a basic understanding of the aforementioned topics. The Basics of PV for Grid-Tied Applications class is a prerequisite for this class and should provide students with the above information. Also, this is not a hands-on installation class or a PV design/engineering class.</p> <p>Our objective in this course is to assist participants in evaluating the technical feasibility of a potential PV project by presenting implementation issues that affect site selection and PV installation, while providing participants with simple tools for preliminary system size estimations. Site analysis topics will include estimation of the available solar resource, system orientation, module tilt angles, planning for shade, and evaluating space requirements. We will introduce participants to tools available for solar site analysis (e.g., compass, solar pathfinder, Solmetric SunEye, fish-eye camera, SunPath software) through hands-on demonstrations, field exercises, and project examples.</p> <p>After participants have developed a strong foundation in solar site analysis, the course will focus on the steps involved in sizing a grid-connected PV system. Discussion topics will include electric load estimation, factors affecting PV system output, and space requirements. We will present concepts through a PV array sizing example. Participants will then have the opportunity to size their own hypothetical systems using different scenarios (e.g., crystalline vs. thin-film modules) and attempt to answer the three critical questions of every potential PV project:</p> <ol style="list-style-type: none"> (1) How large a system (kW capacity) is needed to meet the owner's electricity production goals? (2) Can the owner afford it? (3) Is there enough space on-site to accommodate the proposed system? <p>Since the course will include calculations, please bring pencils, erasers, and a calculator. Weather permitting, participants will be outside for parts of the day (and possibly on roof tops). Consider bringing sunglasses and a hat.</p>		
Audience Level	This class is designed for intermediate-level students who have completed the prerequisite Basics of Photovoltaic (PV) class. Enrollment is limited to students who qualify.		
Agenda	<table border="1"> <tr> <td> <ul style="list-style-type: none"> • Introduction <ul style="list-style-type: none"> - Welcome and Introduction - Course Overview </td> </tr> <tr> <td> <ul style="list-style-type: none"> • Site Analysis <ul style="list-style-type: none"> - Where is Solar South? - Solar Resource (available sunlight) </td> </tr> </table>	<ul style="list-style-type: none"> • Introduction <ul style="list-style-type: none"> - Welcome and Introduction - Course Overview 	<ul style="list-style-type: none"> • Site Analysis <ul style="list-style-type: none"> - Where is Solar South? - Solar Resource (available sunlight)
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	<ul style="list-style-type: none"> - Location of the Sun/Solar Geometry - Planning for Shade Issues
	<ul style="list-style-type: none"> • Break
	<ul style="list-style-type: none"> • Site Analysis continued <ul style="list-style-type: none"> - Introduction to PEC Tools for Solar Site Analysis - Tools Demo - Field Exercise - Review Field Work
	<ul style="list-style-type: none"> • Lunch break
	<ul style="list-style-type: none"> • PV System Sizing <ul style="list-style-type: none"> - Electric Load Estimation - Factors Affecting PV System Output
	<ul style="list-style-type: none"> • Break
	<ul style="list-style-type: none"> • PV System Sizing – Exercise <ul style="list-style-type: none"> - PV Array Sizing: Sample - Exercise: PV Array Sizing Using Different Scenarios - Discuss PV Array Sizing Results
	<ul style="list-style-type: none"> • Questions and Answers; Closing Remarks
	<ul style="list-style-type: none"> • Course Adjourns
Instructor(s)	<p>Tim Townsend Mr. Townsend has worked with PV since 1987 after five years of prior experience at PG&E in the technical and financial analyses of cogeneration, geothermal and advanced fossil generation projects. His recent and current activities for BEW include PV market and system performance assessments, simulation, design review, and field inspections.</p> <p>He has periodically assisted as an instructor for PV workshops, both for BEW as part of a California Energy Commission-sponsored Public Interest Energy Research (PIER) project and also during a 15-year tenure for BEW predecessor Endecon Engineering. With Endecon, he handled PV system performance assessment and reporting for PVUSA, authored a series of DOE-published reports and papers for solar industry conferences, and provided field O&M service at both PVUSA's Davis, California, main site and at several PVUSA satellite sites in California, Texas, New York, and Hawaii.</p> <p>After PVUSA, he served as a subcontract engineer for client BP Solar, designing several completed systems ranging from 1 to 250 kW and handling warranty claims, preliminary designs, energy simulations, and bid proposals for prospective projects. He has also provided product support, field testing, troubleshooting, and repair services at projects in California, Arizona, and Colorado for First Solar.</p> <p>Mr. Townsend received a B.S. in Thermal and Environmental Engineering from Southern Illinois University and an M.S. in Mechanical Engineering from the University of Wisconsin-Madison Solar Energy Laboratory. He is a registered Professional Mechanical Engineer in California.</p>
Cost	No fee for this program
Credits	AIA: 6 (HSW) NCQLP: 0 (Learn more about AIA continuing education and NCQLP .)

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Registration Form (* Denotes required fields)

Your Name:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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(First*, MI, Last*)	
Your Job Title:	<input type="text"/>
Your Company Name:	<input type="text"/>
Street Address 1:	<input type="text"/>
Street Address 2:	<input type="text"/>
City:	<input type="text"/>
State:	California
Zip:	<input type="text"/>
Phone*: (area code + number):	<input type="text"/>
Cell Phone (area code + number):	<input type="text"/>
Fax: (area code + number):	<input type="text"/>
E-mail address*:	<input type="text"/>
* AIA. Member Number (see below):	<input type="text"/>
<p>NOTE: If you have already submitted the information below in a previous form, we have your request and you do not need to check the boxes and radio buttons again. Simply skip the items below and click "Send Form".</p>	
<p><input type="radio"/> Please DO NOT send me e-mail messages about energy efficiency classes.</p>	
<p><input type="radio"/> Please send me occasional e-mails about classes on the following checked topics.</p>	
<input type="checkbox"/> Architecture	<input type="checkbox"/> Alternative Energy (solar, wind, etc.)
<input type="checkbox"/> HVAC	<input type="checkbox"/> Data Collection & Measurement
<input type="checkbox"/> Lighting	<input type="checkbox"/> Residential Energy Efficiency
<input type="checkbox"/> Commercial Refrigeration	
<input type="button" value="SEND FORM"/>	
<p>*If you are not a member of the AIA (American Institute of Architects), leave this field blank. If you are a member of the AIA and want us to report these continuing education credits, please include your AIA member number. After the class, we will report attendees' names and member numbers to the AIA.</p>	

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