U.S. DEPARTMENT OF ENERGY | Solar Instructor Training Network

SOUTHEAST SOLAR TRAINING NETWORK NEWSLETTER

VOLUME 3, ISSUE 1 — Spring 2013

From the Southeast Solar Training Network (SSTN) Staff at the

Florida Solar Energy Center

What's inside:

Comments to any of the stories in this newsletter are greatly appreciated by the SSTN staff. Please feel free to contact us at: **harrison@fsec.ucf.edu** or **block@fsec.ucf.edu.**

Photo: Nicholas Waters, FSEC

During a train-the-trainer event at the Florida Solar Energy Center, participants learn photovoltaic installation details.

Solar Instructor Training Network — Solar Programs in the Southeast

The Southeast Solar Training Network (SSTN) has been conducting a study on how solar courses have been integrated by educational institutions in the Southeast region. This work and a similar study being conducted by the national Solar Instructor Training Network have revealed some very positive results. They are summarized in five categories as follows:

1. Bachelor degree programs that encompass solar technologies are offered in a Applied Science in Energy Technology Management Program.

2. Associate in Science degree programs are offered at numerous institutions with an emphasis on Renewable Technologies and Alternative Energy Systems. Many of these programs are within the Engineering Technology Department.

3. Certification programs are the most numerous and are offered at various institutions. A benefit of certificate programs is that they normally focus on a particular occupation or trade and take less time to complete than common college programs. For many students, particularly at the technician and trade levels, this is a benefit. The programs identified deal primarily with photovoltaics at the installer and technician levels.

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Upcoming Training

Florida Solar Energy Center, Cocoa, FL:

Photovoltaics — June 10-14, 2013

Solar Water Heating Systems — May 29-31, 2013

For more course details, visit http://ce.fsec.ucf.edu/ or contact JoAnn Stirling at joann@fsec.ucf.edu or 321-638-1015.

Solar Instructor Training Network — Southeast Region Newsletter

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http://www.fsec.ucf.edu/en/education/southeast_training_network/index.html

This newsletter is published by the Florida Solar Energy Center – a research institute of the University of Central Florida – while under contract with the U.S. Department of Energy.

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4. Vocational and diploma programs are also quite common at the more specialized vocational institutions. In general, these include construction trade-related PV System Design, Installation and Maintenance, as well as Alternative Electrical Systems (PV) programs.

5. Short course and workshop presentations are also quite numerous. Many educational institutions have offered week-long short courses dealing with basic PV fundamentals and system installation. All of these institutions have been approved as NABCEP PV Entry Level program providers.

The results show that the educational institutions that offer the above programs and courses are primarily in Florida, Georgia, Alabama, and Tennessee. Other SSTN states and territory educational institutions have also integrated solar in various engineering and technical courses, but usually only as part of a specific energy course that cursorily touches on solar. Anyone interested in more information, please contact John Harrison at harrison@fsec.ucf.edu.

PV Design Course

As part of the Phase II objectives, SSTN is working cooperatively with Penn State University on the development of two new PV Design courses.

The first course, developed primarily by Penn State, is a university-level course directed at engineering seniors or graduate students.

The second course, developed by SSTN/FSEC, is directed toward students who have passed FSEC's five-day Installing PV Systems course or an equivalent course.

The objective and textbook for the proposed course are as follows:

The objective of the PV Design course is to develop a course in which the student will learn the basic skills required for performing the design of PV systems. A main feature of the course is a team design project. Design principles require that the student develop and understand the variety of steps involved in a design and, thus, teams of 3-5 students will be tasked with designing a PV project. Due to time limitations, the design team project will be assigned by the course instructor and be given to the students in a virtual manner. The types of projects to be considered are:

- Residential building with utility interactive system, and also with battery backup
- Commercial building, such as large box or grocery store
- Utility system

Textbooks:

1. Dunlop, James, 2010, Photovoltaic Systems Engineering, 3rd Edition, CRP Press, Boca Raton, FL
2. Dunlop, James, 2011, Photovoltaic Systems Training Resource Guide, www.jamesdunlopsolar.com
3. Holt, Mike, Understanding NEC Requirements for Solar Photovoltaic Systems, (Holt, 2011)

Solar Career Mapping Tool

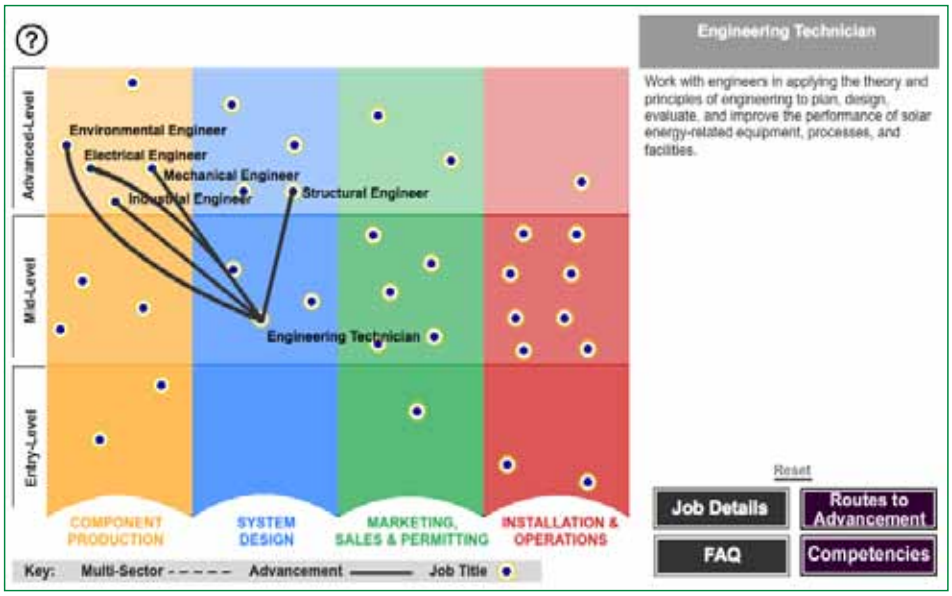
The Solar Career Lattice is the product of a national working group and affiliated experts, including representatives from industry, education, government, labor, and the NGO community. The Working Group was convened by The Interstate Renewable Energy Council in its capacity as the National Administrator of the U.S. Department of Energy's Solar Instructor Training Network. Dr. Sarah White, Senior Associate at the Center on Wisconsin Strategy (COWS), is IREC's lead for this project. She is also Chair of the Working Group and the primary author. The Solar Career Map website explores the many job opportunities available in the solar industry and is a tool intended for use by instructors, policy-makers, and job-seekers.

"This tool explores an expanding universe of solar-energy occupations, describing diverse jobs across the industry, charting possible progression between them, and identifying the high-quality training necessary to do them well," said White.

The interactive online career lattice, **http://www1.eere.energy.gov/solar/careermap/**, maps three dozen solar occupations in four sectors: component production, system design, sales and marketing, and installation/operations. This visual road map includes occupational information, skills and competencies, education and training pathways. A team of national experts selected the 36 illustrative occupations to map. Not every job on the lattice is exclusively or even primarily a solar job, but each one requires some training in solar-specific skills. And, each one is in some way essential to building a robust, high-quality, solar industry.

"Labor markets are organized as lattices, not ladders. There are many possible career routes within and across solar sectors for workers seeking advancement or new opportunities. This tool maps some of them," said White.

According to Dr. White, many people still think of solar energy jobs in terms of roof-top installation, and of the solar industry in terms of bottom-line costs. This tool offers a more nuanced vision. By mapping a broad spectrum of careers across the solar industry, the lattice prompts instructors, policy-makers, and job-seekers to consider a wide variety of occupations accessible to workers with a wide variety of skills and experience. Dr. White also believes high-quality work and high-quality jobs are critical to building a robust, high-quality solar industry. "A poorly trained workforce costs more in the long run. Safety, efficiency, and quality aren't just values; in the solar industry, they create value."



The Solar Career Lattice provides a visual road map of job pathways in solar energy.

Frequently Asked Questions

How can I, as an individual, get solar training?

Training of individuals is not part of the Southeast Solar Training Network at the present time. The training offered is train-the-trainer for faculty or instructors at public educational institutions. At a later time, as the network becomes established, the local institution will offer training for individuals.

Where can I find solar training institutions in the Southeast?

The website listed below provides the names of the educational institutions that FSEC has trained in solar technologies.

http://www.fsec.ucf.edu/en/education/southeast_training_network/partners.html

Where can I find national training institutions?

For trainers:

http://www.sitnusa.org

For students:

http://www.irecusa.org/irec-programs/workforce-development/education-information/

Does this program offer training for energy efficiency, green technologies and wind?

At this time, this program does not cover any training in these technologies. The training covered by this program is photovoltaics and solar water heating.

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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PV Building Code Officials Workshops

One of the major activities of the SSTN project is the course development of PV for Building Code Officials and implementing code workshops. The Department of Energy and the Solar Instructors Training Network have funded the development of two types of courses for code officials. Both courses have been developed under contract to DOE by the International Association of Electrical Inspectors (IAEI) and both courses have IAEI continuing education credits if performed by an IAEI chapter.

The first course is the PV Online Course, which is an 8-hour online course that is open to the public. The course is divided into six sections, and gives a quiz at the end of each section. This course can be found at **https://www.nterlearning.org/web/guest/course-details?cid=402**

The second course is called PV Onsite Training (PVOT), which is a 6 to 8-hour course that is given in a live presentation format. With regard to SSTN, the following PVOT courses are planned.

1. On April 27, 2013, SSTN will be conducting the code official course for the Miami-Dade County Regulatory & Economic Resources Department code officials. This workshop will be held at Miami-Dade College - Kendall Campus. It is anticipated that 200 participants from Miami-Dade County Regulatory & Economic Resources (building inspectors, building officials, plan examiners, architects and engineers) will attend the workshop. Participants will earn Miami-Dade specific credits that are required to maintain code official bi-annual certification by the Miami-Dade Code Department. We have also discussed conducting the workshop again in August 2013. Dave Click, FSEC PV staff member and nationally renowned PV expert and educator, will teach the workshops.
2. Georgia partner, Southface Energy Institute, is currently working with the IAEI Chapter in Atlanta on the logistics of hosting the code course in Atlanta, Georgia. The workshop is not yet scheduled, but is anticipated sometime late this summer or early fall.

IREC
Interstate Renewable Energy Council

IREC Best Practices – Tools for Trainers

A wealth of training resources have been developed by the Solar Instructors Training Network (SITN) and the Interstate Renewable Energy Council (IREC). These resources include numerous publications and reports that serve as valuable information tools and training references. Informative documents can provide trainers with details on solar industry market and employment trends, licensing issues, and annual reports on the regulatory issues, policies, and incentives related to solar energy. All of this information is very beneficial to instructors, students, and educational institution administration decision makers.

Of particular value to educators are the Best Practices documents. These highlight best practices for becoming an effective teacher, developing curriculum and renewable programs, establishing quality courses, and integrating solar into existing education and training programs. These documents are very helpful for those envisioning the establishment of a solar program at their local institution.
The documents present examples of several existing solar education and training programs currently established in the U.S. and includes examples of apprenticeship, certificate, and Associates in Applied Science programs. They also provide lists of textbooks, references and other instructional resources that serve to assist instructors in designing, developing, and implementing courses in photovoltaic and solar water heating.

Access the resources at **http://www.sitnusa.org/trainer-resources**.