Training for Training Providers – Solar Workforce Development

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Colleen McCann Kettles Bio

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Colleen Kettles is the Director of the Clean Energy Banner Center at the Florida Solar Energy Center where she is responsible for workforce training and education in the growing alternative energy sector. Colleen has more than 30 years experience in legal and policy research and market transformation activities in the field of solar energy and energy efficiency. Colleen is a graduate of the University of Florida College of Law and a member of the Florida Bar.
Training for Training Providers

ABSTRACT

• The Banner Center for Alternative Energy and the South East Solar Training Network are workforce development programs hosted by the Florida Solar Energy Center. Built around the concept of “train-the-trainer,” the programs have substantially increased the ability of solar technicians to receive quality training throughout Florida and the Southeast United States. The training provider network that has been established is a model that other regions may want to consider as a means by which to expand the skills of un- and under-employed workers who can then respond to the need workers in the growing solar industry.

• Essential elements of the programs include curriculum development, training for the trainers, technical assistance, resource support and assessment. In this session, information regarding the current status of the programs, successes, lessons learned, and plans for the future will be offered. It will also identify policies that can keep the trained workers employed, as well as those that disrupt the development of a sustained solar industry.
Outline

• Florida Solar Energy Center
• Training Programs
• Clean Energy Banner Center
• Southeast Solar Training Network
• Training Results
• Future Issues
FLORIDA SOLAR ENERGY CENTER

Creating Energy Independence

A Research Institute of the University of Central Florida
Florida Solar Energy Center

- Created in 1975
- Serves as Florida’s energy research institute
- Conducts research, testing, certification and education
- Staff ≈ 150 research faculty, scientists, educators, and support staff
Florida Solar Energy Center

Classroom Facilities

Laboratory Equipment
FSEC Training in 2010

– Offered 124 training courses
– Offered 37 distinct courses (i.e., PV, Solar Thermal, etc.)
– Details:
  • 543 students in energy rater courses
  • 82 students in solar thermal courses
  • 202 students in PV courses
  • 104 students in green home certification courses
Photovoltaic Workshops

- **Objective:** Intensive training for design and installation of photovoltaic technologies, including service and maintenance.

- **Offered:** Monthly and on demand. Enrollment is restricted to 25 students to assure a quality experience in both classroom and laboratory sessions.
Solar Water Heating Workshops

- **Objective:** Intensive training for solar water and pool heating technologies, including design, installation, troubleshooting, residential and commercial systems.

- **Offered:** Quarterly. Enrollment is restricted to 30 students to assure a quality experience in both classroom and laboratory sessions.
Other FSEC Training/Educational Programs

- Weatherization
- Energy Gauge (Home Energy Rating)
- Green Building Certification
- Disaster Preparedness
- Teacher In-Service Training
- Online Webinars
- Public Events and Tours
- On demand programs (building inspectors, utility auditors, facility managers, etc.)
Clean Energy Banner Center

- Created by Workforce Florida in 2008
- Industry driven education and training
- Focus is on PV and solar thermal technologies
- Train Florida community college and vo-tech faculty through “Train the Trainer” program
- Student instruction conducted by trainees at their local institutions
- Have trained faculty at 22 institutions
Clean Energy Banner Center
Training Providers

- Brevard Community College
- Broward College
- Broward Schools
- Building Officials Association of Florida
- College of Central Florida
- Contractors Institute
- Construction Banner Center
- Daytona State College
- Florida Keys Community College
- Florida Solar Energy Center
- Island Coast High School

- Lely High School
- Miami Dade College
- Palm Beach Community College
- Pinellas Technical Education Center
- Santa Fe College
- Seminole Tech Centers
- State College of Florida
- Tallahassee Community College
- Technical Education Center of Osceola
- Westside Tech
- Withlacoochee Technical Institute
DOE Southeast Solar Training Network
Approach and Focus

• Provide replicable training to instructors
• Conduct workshops that provide theory as well as hands-on and laboratory practices
• Provide trainers with methods, tools and resources to develop local training programs
• Ensure high quality solar installations
• Ensure that training programs create good installers
• Familiarize educational community with solar technologies
Partnerships

- Nine state/territory energy offices – selected institutions and faculty members
- 49 educational institutions
- Solar energy industry members – Advisory Boards
- Workforce Florida and local workforce boards
Participating Educational Institutes

Educational Partners
Results

- 108 instructors trained
  - 56 Thermal
  - 52 PV

- 49 Total educational institutions and organizations
  - Institutions represented
    - AL – 8
    - AR – 4
    - FL – 22
    - GA – 5
    - KY – 5
    - MS – 1
    - TN – 4
    - PR – 1
    - VI – 4
### Estimated Offerings at Participating Institutions

<table>
<thead>
<tr>
<th>Technology</th>
<th>Number of Institutions</th>
<th>Number of Faculty Trained</th>
<th>Number of Courses/Year</th>
<th>Estimated Students</th>
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<tbody>
<tr>
<td>PV</td>
<td>23</td>
<td>25</td>
<td>82</td>
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<tr>
<td>SWHC</td>
<td>14</td>
<td>16</td>
<td>43</td>
<td>830</td>
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<tr>
<td>Total</td>
<td>37</td>
<td>41</td>
<td>125</td>
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</table>
Curricula Development

- PV and SWH – both aligned with NABCEP task analyses
- PV Technical Sales – developed and offered Jan. 12-13, 2011
- PV Design Course
- Building Code Officials
Institutions offering NABCEP Exam

• Calhoun Community College, AL
• Tennessee Technology Institute at McKenzie, TN
• University of Tennessee, TN
• Gwinnett Technical College, GA
• Lanier Technical College, GA
• Moultrie Technical Institute, GA
• College of Central Florida, FL
• Withlacoochee Technical Institute, FL
• Gainesville Job Corps, FL
Apprenticeship Programs

• Florida Joint Apprenticeship Training Committees, statewide FL
• Gainesville Job Corps, FL
• NW Arkansas Community College, AR
• Tennessee Technology Institute at Pulaski, TN
• Tennessee Technology Institute at McKenzie, TN
Internship Pilot Program
Brevard County, Florida

• NASA KSC layoffs = 2,000 now; 6,000 future
• Working with Space Coast Energy Consortium
• Partnering with Brevard Workforce
  1. Develop operating plan and tool-kit
  2. Conduct outreach to employers and job seekers
  3. Matching employers and job seekers
  4. Establish training protocols
Laboratory Equipment

- List of recommended equipment needed for hands on laboratory was developed and provided to trainees
- Estimated equipment cost (20 student class)
  - PV = $49,000
  - SWH = $23,000
Future Focus – Next Steps

- Uniformity of curriculum and materials
- Provision for laboratories at provider institutions
- Optimize training provider network
- Assessment of training providers
- Development of apprenticeships and internships
- Enhance industry participation
- Plan for program sustainability
Alignment with DOE Goal

Reduce Installed System Cost

• Financial Incentives
• Material Improvements
• *High quality installation infrastructure*

One return trip to job = No profit and bad name!
Sustainable Policies Needed

• Southeast has highest potential but weak policy base at present:
  – Financial incentives lacking
  – No RPS
  – Cheap electric rates
  – Absence of solar rights legislation
  – Immature infrastructure
  – Limited contractor licensing
The Next Great Idea
Let’s Get to Work!