

THE GREENING OF REGISTERED APPRENTICESHIP IN FLORIDA

Impact of Green Jobs on Registered Apprenticeship

**Final Report
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The Greening of Registered Apprenticeship in Florida

Patrick J. McLaughlin, McLaughlin Management, Inc., conducted six sessions with 50+ individuals attending to discuss using green initiatives within the apprenticeship community. Participants represented Florida apprenticeship organizations, as well as various government, industry, and construction affiliations. They participated in forums to discuss what is currently happening in their education programs relevant to the green movement, and to explore next steps in enhancing the green movement within their educational programs.

The sessions were organized by the Department of Education / Apprenticeship Section / Region Apprenticeship Representatives (ATR's) across the state. The ATR's involved with organizing and hosting the events in their area were: Dave Islitzer, Tallahassee; Bill Lauver, Jacksonville; Valvery Hillsman, Ft Lauderdale; and Steve Lindas, Orlando. The initial 2 facilitated sessions were done for Robert Grizar, Department of Education, Program Director of Apprenticeship. The last four sessions were done for Ken Olsen, Department of Education, Apprenticeship Director.

Introduction to Apprenticeship and the Green Initiative

Pat McLaughlin, Facilitator, began each session explaining what apprenticeship is and how it benefits workforce systems and employees. McLaughlin then described the meaning of the "green economy". For many of the participants, this was **not** their first foray into the green movement; many are quite versed on the subject. However, this was an awareness session to educate participants as to what is available for the construction industry in the way of curriculum enhancements, financial opportunities and educational resources.

The green economy is rooted in the development and use of products and services that promote environmental protection and energy security. This is comprised of industries and businesses engaged in:

- Energy efficiency
- Renewal energy
- Preventing and reducing pollution
- Mitigating or cleaning up pollution

There really isn't a separate "green economy" with its own set of industries and occupations. Instead, we have one economy that is insisting on everyone recognizing the benefits of the green environment. Markets are responding well to consumer demand for more environmentally friendly products and services.

Legislative Movements

Our government is leading and supporting the green initiative bandwagon. Several governmental bills currently focus on green job training and development:

Green Job Training (Sec. 422) – This bill increases funding authorization for the Energy Efficiency and Renewable Energy Worker Training Program.

Green Construction Careers Demonstration Project (Sec. 424A) – This bill directs the Secretary of Labor, in consultation with the Secretary of Energy, to establish a Green Construction Careers demonstration project "to promote middle class careers and quality employment practices in the green construction sector."

Clearinghouse for Vocational Education and Job Training in Renewable Energy Sectors (Sec. 423) – This bill directs the Secretary of Labor, in collaboration with the Secretaries of Energy and Education, to establish a publicly available web-based information and resources clearinghouse.

Clean Energy Curriculum Development Grants (Sec. 421) – This bill authorizes the Secretary of Education to award competitive grants to partnerships for the creation of green curricula.

Low Income Community Energy Efficiency Program (Sec. 264) – This bill authorizes \$50 million for each of the fiscal years 2010 through 2015 for a competitive grant program.

NCCER and the Green Initiative

The sessions have evolved over the past two years as more information has been discovered about "green" training programs around the state. For the final two sessions, McLaughlin reviewed a presentation from the **NCCER – the National Center for Construction Education and Research**. NCCER is a not-for-profit 501 (c) (3) organization affiliated with the University of Florida. It is the leading source for workforce development resources for the construction, maintenance and pipeline industries.

The presentation notes that green jobs will bolster employment in the near future, especially in the construction and manufacturing arenas.

This research also indicates that the following jobs will be required to build this U.S. green economy:

1. Carpenters
2. Heavy Equipment Operators
3. Construction Managers (2)
4. Electricians (3)
5. HVAC
6. Industrial Machinery Mechanics
7. Industrial Truck Drivers (3)
8. Insulation Workers
9. Iron & Steel Workers
10. Metal Fabricators (3)
11. Millwrights
12. Roofers
13. Sheet Metal Workers

SOURCE: www.greenjobsnow.com/hq/Excerpt-Green-Jobs-PERI.pdf

The six energy efficiency and renewable energy strategies being researched include:

1. Retrofitting buildings to increase energy efficiency
2. Expanding mass transit & freight rail
3. Constructing “smart” electrical grid transmission systems
4. Wind power
5. Solar power
6. Advanced biofuels

SOURCE: www.americanprogress.org/issues/2008/09/green_recovery.html

The **NCCER Green Curriculum** and resulting **Green Advantage Certification** is available to existing apprenticeship programs as an add-on through the NCCER organization. Participants received information on these exciting breakthroughs in the NCCER presentation.

The **Pinellas Weatherization Training Center** is another opportunity for existing apprenticeship programs to increase their awareness and involvement in green training. The Pinellas Center’s goal is to train Florida’s workforce for green jobs and to assist Florida in weatherizing more than 19,000 homes by 2012.

The Pinellas program offers three certificate courses:

1. Weatherization Installers
2. Weatherization Building Energy Auditors, and
3. Building Performance Institute (BPI) Field Proctors.

The NCCER and Pinellas programs exemplify the overarching goal of these green sessions: “For registered apprenticeship to help local apprenticeship “Green” their programs”.

At each session, McLaughlin posed the following questions to the group:

- What are Florida Registered Apprenticeships doing now?
- What are Florida Registered Apprenticeships planning to do?
- What can the Registration Agency do to assist Your Programs?

What are Florida Registered Apprenticeships doing now?

Following are key findings:

- Tallahassee Community College (TCC) started green training over two years ago with classes in Solar and Photovoltaic classes.
 - The first thing TCC did before starting these “Green” programs was to go out to the industry and explain the benefits these skills can mean to an employer, whether electrician, plumber, or HVAC company.
- In Jacksonville apprenticeship representatives recognize that trained tradesmen should focus on their specific area of expertise. For example, often electricians, not roofers, are hired to install solar roofing panels. Code violations can result when contractors don’t understand the intricacies of the construction field.
 - Apprentice programs are ensuring the correct procedures are being taught for both plumbing and electrical installation of solar panels. This results in energy savings and environmental protection.
- Flagler County put on a “Home Show” that attracted between 3 – 5 thousand potential employees. This was followed with a “Green Expo,” and then another event at Town Center that featured planting trees in honor of all who attended. These events not only promoted the green initiative but also were a great draw for viable employers.
- A similar promotional event was held in Ocala a few years ago with the same results. The auditorium at the Vocational Technical Center was filled.
- Jacksonville also offered a “Green Expo.” Again, the community response was great, with many attendees.
- Flagler County established a green landscaping vocational program. Similar programs are planned for air conditioning and electrical.
- Jacksonville also recognizes there is funding for the taking. Often, a simple “repackaging” of the existing program is all that is needed. Spruce it up, and go for the opportunity. As with all marketing – it is all in the *perception*.
 - Talk to the parties you are interested in. Refrain from talking to people in traditional terms. Talk to them in their language. As mentioned in the recent “Collaboration for Success Clinic”, it’s all in how you speak to your audience. Instead of saying “career” say “talent supply chain.” Use today’s terms. Words mean a lot. Speak to what your audience wants to hear.
- One group is sponsoring a summer camp that teaches basic skills regarding green construction, such as recycling. The students will participate in a project to build a house for a non-profit organization.
- The masonry industry has been green for YEARS. What could be greener? Masonry uses local cement, local labor, local water. Some participants questioned the use of “local labor!” Again – all in perception!
- At a recent Building Officials Conference in Tampa it became apparent that many commercial high-end builders appreciate masonry products. Did you know there is a city ordinance in Jacksonville that every building has to be built with masonry? It is not clear if the record has run out. Specifications for a recent arena in Jacksonville required the building plans be changed to accommodate building with masonry. Remember – it’s green if it enhances the environment and saves energy.

Use of EPA Standard Refrigerants

- Regarding HVAC, many suppliers are switching to new recyclable refrigerants as required by the EPA. As of January 2011 the older refrigerants will not be produced. The pressures and temperatures on the newer refrigerants are different, higher and more dangerous, and require training. Even the older mechanics are coming to our facility to be trained.
- Florida is a humid environment that produces excess condensation. Especially on commercial buildings, this water is basically wasted as we continue to throw city water on top of the condensation. Now the condensation is being recycled through a tower system. This is more efficient. We have always said in the cooling industry the purpose is to take heat where it is objectionable and put it where it is unobjectionable. Recycling prevents throwing good water down the drain.

Installation of Solar Power

- The workforce training programs out of Lee and Henry Counties are training approximately 50 people in Solar Voltaic (electrical trade.)
- In northeast Florida electricians let the roofers put the solar units on. However, the electricians need to do all the hook-ups.
- In Lee and Henry Counties tradesmen are trained to install solar panels both structurally and electrically.
- With solar power, it is no longer necessary to turn off the A/C during the day; it is best to leave on so the house does not heat up, keeping the unit cool all day.
- With solar, installation must be done correctly to meet standards and remain efficient.
- The new solar equipment requires additional training to ensure correct installation.

Frequency Jobs

- New equipment looks at speed inside and out, and synchronizes them. This is especially useful in commercial buildings.
- This equipment is expensive. Equipment installed two years ago is just now showing the payback; the payback **does** justify the cost.

HVAC Industry

- Florida Air Apprenticeship has for some time embraced the green initiative especially in light of the government regulations regarding the use of non-chlorine coolants. First-year apprentices are required to become EPA certified.
- However, the industry at times seems reluctant to embrace the green initiative. Florida Air Apprenticeship began requiring EPA certifications some 15 years ago. They look at high efficiency equipment not as the exception but as the norm, and have been promoting its use for 15 years. They also ensured that the 12 recent graduates of the HVAC program at the local high school are also EPA certified.

Plastics and the Cement Mason Industry

- Pervious concrete is a great material to work with when educating masonry apprentices. This type of concrete is good for parking areas, as it acts like a honeycomb – the water can go right through it. It surrounds the paving surface to allow the water to drain off.
- This group also recycles marbelite, which is used for plastering. Two manufacturers currently have agreements to recycle clay products. They can crush and grind the clay to use for fertilizer. Another green initiative is the crushing of ceramic concrete – again, to be used for fertilization of plants.
- This ceramic concrete is a man-made concrete, first manufactured by the government in 2001 to encapsulate waste. A company then procured a patent, did some research, and developed ceramic concrete. It has a rating of 3000 degrees resistance per cubic inch, with actual weight resistance of 4000 psi.
- They are also working on “green crete”, which has 5000 psi. Green crete is a lot better because it is more cost efficient. It is non-Portland cement. Portland cement is high energy – you have to mine it, grind it, then process it. Both the ceramic concrete and the green crete were tested at 3000 degrees with fire and everything tested ok. The material stays pure under water, and petrifies wood.

What are Florida Apprenticeships planning to do?

- It is clear that masonry has been practicing green for years. How can we ramp up these programs? Can they be repackaged - change the language, and target the new green generation. Nothing merits more credit than “living what you preach.” Do a hands-on school demonstration. Show what you do; don’t just talk about it. What excites kids? What is socially acceptable?
- As pre-apprentice training begins with the high school, introducing green opportunities at the high school level is a given. Green skills are attractive to the younger generation and can be an effective way to generate interest in a trade/skill. When students hear of the future opportunities offered in energy alternatives, conservation practices and environmental protection, they perceive a bright future within apprenticeships.
- Beginning in July, the start of the fiscal year for the State, field representatives will be sent on the road to work out projects under Federal grants. They will speak to State representatives, speaking the right language to build the partnerships we have been discussing – bringing together universities, colleges, school boards, cities, and union and non-union apprenticeships.
- One “dream” for partnership is to have a central training facility, such as what has been tried in Ft. Pierce – all trades are in one building. Another dream is to promote after-school programs for high schools. One obstacle to increased vocational /technical training in middle/high school is the emphasis placed on FCAT scores and preparation.
- We must continue to pursue key partnerships, and maintain access to all school officials – administrators and advisors. Go to the schools, and let parents know their children are under proper guidance. Menendez School is an excellent example of a successful partnership program. The Florida Masonry Apprentice & Educational

Foundation (FMA&EF) has sponsored projects at the school approaching \$50,000 per year.

- Good economic times will return; we must be ready, with adequate funding. The one thing the Florida Department of Education can do is provide jobs. We need employment numbers to rise. Vocational students need on the job training hours.

Two items were emphasized regarding vocational education:

- Apprenticeship is not just about jobs. It is about careers. The majority of the programs are well ahead of the curve for green environments.
 - We must promote what we have already accomplished! Tie craftsmanship and knowledge of the trade to the green initiatives. Promote all trades that lend themselves to apprenticeship – electrician, air conditioning, etc.
- All participants were asked to complete a questionnaire provided by the U.S. Department of Labor on “Apprenticability Determination Worksheet.” This analysis will indicate what job descriptions might be applicable for apprenticeship. What jobs are evolving within your sphere of influence? Consider the nature of services, and what could be added to your curriculum.
 - Participants were advised to visit website links to banner green centers in Florida, such as www.fsec.ucf.edu/en/education/banner/links.htm and the Solar Energy Center located at: www.fsec.ucf.edu/en/. Also, send any updates on green initiatives to Bill Lauver, your state apprenticeship representative, so they can be listed on the website.

What can Tallahassee do to help?

The groups were asked to make recommendations to take back to Tallahassee and individuals like Valvery Hillsman, DOE - Division of Career and Adult Education, South Florida Representative (ATR). What can registered apprenticeship do to fortify the green initiatives, especially in the areas of energy savings and environmental remediation? This is the charter for the individuals like Valvery – to work together with industry apprenticeship programs to fortify the apprenticeship community.

Suggestions

- Write a curriculum. Interview members of this group to ascertain requirements and design a curriculum.
- Assist with applying for grant dollars to promote the programs.
- Assist with knowing where to get grants – from what workforce.
- Provide dollars – always needed, especially in light of the shrinking economy.

There are 24 workforce boards in the state of Florida. Some members of this group felt it is difficult to get the support of the boards to secure grants. Patrick McLaughlin offered encouragement to the group, telling them that state apprenticeship and others are developing relationships with the workforce community and support is on the way.

Monies are available at the federal level; you just have to know where and how to get it.

Another issue encountered by apprenticeship programs is keeping the curricula, as well as equipment, up to date. Both cost money to maintain. Technical centers can help; \$30,000 was recently needed for equipment for the solar education programs.

Florida does have a great program on solar energy; we are the guys to go to. We – electricians, structural workers, etc. – need to work together as a team.

One suggestion was to visit “Reconstruct FL.com.” Steve Lindas, State Apprenticeship Rep in Mid-Florida, is promoting this website. It is a statewide job placement program for construction workers.

Banner schools in Florida are available for critical industries – everything from manufacturing to agriculture science. The banner school for construction is at Santa Fe Community College, located in Gainesville. Kurt Morauer is the Executive Director. The school is a resource for training. Indian River State College has programs in energy and homeland security. The group received handouts with information about the banner schools.

Patrick McLaughlin encouraged participants to research websites on “green construction” for more information.

NCCER Curriculum

As previously mentioned, educational facilities can enhance current programs by adding national programs, specifically NCCER’s Build – Train - Green Program. NCCER provides opportunities to extend apprenticeship programs – HVAC, electrical, construction – through programs such as NCCER’s Build – Train - Green.

McLaughlin encouraged participants to develop strategies to take advantage of the NCCER programs to promote the green initiative and the green economy. Stimulus monies have been dedicated to youth building programs, such as the Boys and Girls Club. This is the time to pursue the grant money. The Banner Center for Construction in Gainesville is just one example of a facility that recently acquired such grants.

The Green Jobs Act of 2007 was the initial impetus to implement these programs. An example is the Job Corps Program in Pinellas County. NCCER has done a terrific job putting together the professional curriculum, both text and web based. You simply have to pay for it. NCCER’s materials are all encompassing and designed to supplement your curriculum.

As an instructor you do have to become certified by an accreditation center. You can request certification information from NCCER, who will be more than happy to accommodate you. They are just a phone call away. You will get the full package – accreditation, the necessary curriculum, supplementary materials, study guides. You don’t have to develop the curriculum; it is already developed for you.

Also mentioned in this report was the Pinellas Weatherization Training Program. Pinellas County received millions in grant money to put this program together. It is not limited to Pinellas County. It can be offered anywhere. The program is “weatherization specific.” The curriculum can be offered with any type of training. It is to promote the green workforce, to create 19,000 jobs. There are three separate study fields: weatherization installation, building energy installation, and building performance field proctors. The Job Corp is prevalent in the Tampa/St. Pete area.

With this program you will get 15 CEU hours and you will be accredited. There are grants to pursue these programs. The grants focus on individuals 18 years and older; veterans; and unemployed workers.

If you are interested please contact James Robinson. His contact information is included in your packet of information. Please note Joyce Rivas (formerly of the Masonry Foundation) is now working with the weatherization program as a key recruiter.

What can the Registration Agency do to assist Your Programs?

McLaughlin then posed the question: “What can the Registration Agency do to help?” McLaughlin referred the audience to the application determination sheet that includes questions used for application to the green programs. The first page of the worksheet details program requirements. The second page provides job descriptions and models for participants to use. It also lists questions the National Department of Labor will be asking when you wish to submit your application to get your program started.

McLaughlin asked the group to please let their Registered Apprenticeship ATRs or the apprenticeship office in Tallahassee know of any ways they can help in the pursuit of this green initiative. This initiative was enforced by the legislation four years ago; so the time to act now. Many colleges are in this movement, a key one being Indian River State College.

Questions arose about monies being available for pre-apprenticeship. McLaughlin reiterated that the Gates act (named after its sponsor Senator Gates) was passed that mandated comprehensive reform of CTE. The law requires that new CTE programs be designed to meet a real workforce need, and that CTE students (High School) should earn high-quality industry-recognized certifications.

McLaughlin encouraged participants to review the information offered online, and also through mobile units that will visit upon request. There are many websites devoted to the green movement relevant to the construction industry.

Conclusion

The primary objective of these sessions was to raise awareness of the green movement – and that was definitely accomplished. Participants learned of valuable educational resources available to the Florida apprenticeship community to research and adapt to the new “Green” economy. Information on acquiring grants and other funding resources was also shared.

The heating and air conditioning trades have for years been involved in environmental issues, as the quality of air is a huge issue with consumers. And as energy conservation is a prime concern with suppliers and users of heating and air conditioning, the green initiative is most palliative. Apprenticeships in these trades have long abided by the codes and regulations that ensure energy efficiency and cleanliness.

Often the vernacular of an initiative needs to be pronounced and promoted. The apprenticeship community needs to continue with its green efforts and leverage them with the right communications. In addition, apprenticeship providers are encouraged to seek pre-apprentice opportunities in their trades. Efforts can start in the high schools when discussing career options with graduates. The younger generation sees the green movement as a necessity, not just a nice to have. They will jump on the bandwagon if they feel they are making a difference in global sustenance. High school programs may be more adaptable to incorporate “green” training into their curricula.

All construction trade apprenticeships must take advantage of the NCCER curriculum and educational resources. If they do so, they will increase their student enrollment and will offer professional courses already proven to be successful. The train has left the station. You can climb aboard or be left behind in the dust.

Respectfully submitted,

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