

Getting It* Done

With **ATTE** **Advanced Transportation, Technology & Energy**

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Delivered Through Community Colleges and Their Partners

Initiatives of Economic & Workforce Development include:

- Advanced Transportation, Technology & Energy
- Applied Biological Technologies
- Performance Improvement
- Environment, Health, Safety and Homeland Security
- Health Care
- Multimedia & Entertainment
- Applied Competitive Technologies
- International Trade
- Small Business Development
- Workplace Learning

Photovoltaic Education Program A Partnership Between IREC, Hands On Solar, Inc. & ATTE

There is an increasing need for student learning and workforce training in renewable energy technologies to meet the growing appetite for renewable energy in California and the nation. To address this need, it is critical for both faculty and school administrators to understand what is necessary to develop and implement competent and consistent industry-approved education programs.

To that end, the Interstate Renewable Energy Council (IREC) and Hands On Solar, Inc. initiated a half-day Introduction to Photovoltaic Training program. The Advanced Transportation Technology and

Energy Initiative (ATTE) has joined this partnership to support and further this work throughout California. IREC, formed in 1982 as a non-profit organization, supports market-oriented services targeted at education, coordination, procurement, the adoption and implementation of uniform guidelines and standards, workforce development and consumer protection. Hands On Solar, Inc. is a private company that provides industry-based

solar energy education services. ATTE is an initiative from the California Community College Economic and Workforce Development program

The workshop is for community college and high school faculty and administrators who are interested in starting solar electricity (photovoltaic) education programs. It addresses the education needed to meet industry-set learning objectives and standards.

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CURRICULUM TOPICS INCLUDE

- The importance of quality instruction in photovoltaics
- Steps to setting up a photovoltaics instructional program
- Curriculum development
- Instructional resources
- Finding qualified instructors
- Setting up an appropriate learning environment
- Securing local support
- Establishing a job placement network

a new
“GREEN ECONOMY”



Wind Turbine Train-the-Trainer Program

Airstreams LLC Partners with ATTE for Utility Scale Wind Turbine Training

Alt. Energy at Rio Hondo College

Rio Hondo College has developed five new courses for the Alternative Energy Technology program that will be offered next semester. The five courses are:

- 1 Introduction to Alternative Energy,
- 2 Photovoltaic Design & Installation,
- 3 Wind Energy Systems Design & Installation,
- 4 Advanced Photovoltaic Systems, and
- 5 Advanced Wind Energy Systems.

This program is the first step towards an Alternative Energy certificate and, soon, a degree in Alternative Energy. We are also trying to articulate with four-year schools so our students will be able to continue their education.

Rio Hondo College has also been working to develop a curriculum that will help create a career pathway for grades 7–12. The program offers a model Alternative Energy education curriculum tailored for youth, which includes class discussions, interactive and hands-on activities on alternative energy, and scientific experimentation that fosters critical thinking. This program will travel to local middle schools and high schools to give presentations about alternative energy, energy efficiency, sustainability and conservation to students to bring them the knowledge they need to help make a difference in our energy future. We will also support the middle school and high school teachers with renewable energy kits, curriculum and instruction to help continue this endeavor.

Rio Hondo College will be offering a summer workshop on Alternative Energy. This will be a week long program offered at the college. This workshop is intended for people that want to learn basic information on the different types of alternative energy, about rebate programs for alternative energy systems, and about electrical safety. Attendees of this workshop will receive information on impact that our energy use has on the planet and ways to become energy independent. There will be guest speakers for the industry, and each day will include a hands-on element. In addition, participants will walk away with practical knowledge that they can apply in their own lives. The workshop will conclude with installing a basic photovoltaic energy system.

Steve Tomory, stomory@riohondo.edu

As California's energy demands continue to escalate and the economy continues to sag, going green has been one of the primary missions for ATTE. The ATTE initiative has been training faculty in green technology for almost two years. During this process, ATTE has delivered training in Photovoltaic systems, Leed certification and, most notably, Utility Scale-Wind Turbine training.

The Utility Scale Wind Turbine training was developed in collaboration with Airstreams LLC. Cypress College and Airstreams worked closely to deliver a training product for credit and non credit training programs. The product consists of 52 training modules covering many subjects including safety, electronics, PLCs, hydraulics, and wind turbine systems. The finished product includes PowerPoints, Instructor's guide, handouts, and lab sheets. With the training product complete, ATTE has proceeded to deliver three train-the-trainer programs statewide.

Airstreams has been very happy with the partnership. This is a prime example of industry and education working together to meet the needs of industry, incumbent and new workers, while supporting the California

economy. Since the creation of the training program materials, Airstreams has expanded its operation to include a training department including four instructors and one training manager. Additionally, it has purchased land to build a training center and is at the ground-breaking stage now. ATTE has been as equally as enthusiastic. We continue to collaborate and work together to solve the needs of the wind turbine industry.

While an anticipated 12,000 new jobs will open immediately, Cypress College continues to leap forward to deliver "Utility Scale-Wind Turbine Training". Many faculty members statewide have been given the training package and the opportunity to attend training. Thus far, the training

programs have been well received and highly praised. Currently, due to Cypress College's ATTE efforts, 50 faculty have been trained in "Utility Scale-Wind Turbine Technology." Accordingly, the following campuses are in the process or have initiated wind turbine technology training programs with our curriculum: Cal Poly San Luis Obispo, Shasta, Rio Hondo, Cerritos, Victor Valley, Golden West, Glendale, Antelope Valley, Las Positas, Chaffey, El Camino, Ohlone, Clinton, Modesto, San Mateo, Peralta, Cabrillo, Chabot, Mission, Cerro Coso, and College of the Desert. With the aid of Cypress College, these campuses are one step closer to creating a "green" training program.

For more information, contact David Esmaili of West Valley-Mission CCD at david_esmaili@wvm.edu

"52 training modules covering many subjects including safety, electronics, PLCs, hydraulics, and wind turbine systems"



going green

Semi-Final HANDS-ON Automotive Technology Competition Cerritos College Hosts Los Angeles County High School

On January 24, 2009, Cerritos College hosted 18 Los Angeles County high schools, which competed in the hands-on portion of the Automotive Technology Competition. The two winning teams won a trip to compete in the national competition, to be held at the New York International Auto Show in April. The teams were tested in their knowledge in the areas of engine performance, electrical systems, brake performance, fuel and emissions and tools and measurement.

During the competition the teams, which consisted of the top two students from each school, were broken up into two groups. The teams had to use their diagnosing skills to repair a number of pre-assigned problems or "bugs" under a car's hood within an allotted amount of time. Each "bug" correctly repaired is worth a number of points, depending on the level of difficulty. In preparation for the competition, students trained with their high school instructors along with certified technicians at local franchised auto-

mobile dealerships. The winner of the first group's teams will be sponsored by the Greater Los Angeles New Car Dealers Association (GLANCD) and the winner from the second groups is sponsored by the Southland Motor Car Dealers Association (SMCDA) at the April competition.

With Los Angeles County being one of the largest retail automotive markets in the world with one of the most sophisticated and enthusiastic markets in the country, area dealerships are setting the standard for innovation and selling. Setting the standard, means that the dealerships are faced with the ever-growing shortage of high-quality technicians to repair and maintain these vehicles each year. Both GLANCD and SMCDA realize the importance of investing in new talent for the industry.

Other sponsors, for the event included MATCO tools and Mercedes-Benz of America. Both organizations donated prizes and gifts to the schools.

More info: mail Jannet Malig, jmalig@cerritos.edu



"...teams had to use their diagnosing skills to repair a number of pre-assigned problems or "bugs" under a car's hood within an allotted amount of time."

West Valley College Offers Needed Wind Technician Instruction

With electrical energy costs increasing and global climate change needing to be addressed, the implementation of renewable energy technology is required now more than ever. California is progressive in its use of energy-efficient technologies, and wind energy is used more often. Wind turbines are becoming more complex, and new "smart" wind turbines are extremely efficient in capturing the wind's energy. Not surprisingly, sophisticated technology requires modern repair technicians, and currently there is a dearth of them. The growing wind industry provides an opportunity for community colleges to provide training and certification in Utility-Scale Wind Technology.

ATTE has partnered with Airstreams LLC to develop an industry-based curriculum that offers instruction in



Utility-Scale Wind Technology, covering all recommended OSHA, wind specific and technical safety areas, including installation and repair.

On January 12–15, the West Valley College ATTE hosted this comprehensive train-the-trainer course that provided instruction to a dozen attendees. Taught by Mike Messier of Airstreams LLC and Marty Orozco of Cypress College ATTE, the four-day train-the-trainers course provided instruction and curriculum to equip participants with the materials needed to offer courses that meet the needs of today's wind industry.

Participants in the class came from a number of California community colleges, Clinton Community College in New York, and the Santa Clara County Regional Occupational Program. The

faculty in attendance noted their appreciation of the question and answer portion of the class with importance placed on the value that Mr. Messier's personal knowledge and hands-on field experience added to the course instruction.

Now that the curriculum has been developed and disseminated, it is likely that we will be seeing training programs for wind turbine technicians at more and more community colleges in California. As we move into an era calling for more green-collar jobs to support a stronger domestic economy, the community college system finds itself well positioned to provide the training needed to create a workforce prepared to enter these jobs.

For more info, contact David Esmail of West Valley-Mission CCD at david_esmail@wvm.edu

Photovoltaic Education Program Partnership

Continued from front.

It also covers information on the PV Entry Level Certificate of Knowledge that is offered by the North American Board of Certified Energy Practitioners (NABCEP), and how schools can become provider institutions.

IREC and Hands On Solar launched these important training events July 24 in Sherman Oaks, with 26 workshop participants from 10 different schools in attendance. Since then there have been two other IREC/DOE events at East L.A. College and Miramar College, respectively. A fourth is scheduled for November 14 at Sierra College in Rocklin. ATTE has sponsored two smaller events at El Camino and Long Beach City College, and Fresno City College. An additional program is scheduled for College of the Redwoods in April 2009. There have been well over



100 participants from 36 different schools to date, with many more registered to attend the three upcoming workshops.

To follow up on the one-day program, the partnership has also begun a two-day "intensive" program. These have been held at San Diego Miramar College and also at Santa Monica City College in January 2009. A total of approximately 50 faculty

(community college and high school) and business partners attended these events. These will focus on specific program and curriculum development.

Key results of these efforts are that Santa Monica, Pasadena City, Long Beach City and El Camino community colleges are moving ahead with photovoltaic education programs. They have either applied

or are applying to become a NABCEP Provider of the Entry Level Program. San Diego City College is expanding its curriculum to include solar and to integrate its education with nearby Kearny High School Construction Academy. San Diego Miramar College is working with Scripps Ranch and Serra High Schools on energy education programs and curriculum.

For alternative energy to lead us into a new "Green Economy," we must have a well-trained work force. We need schools online to offer effective programs in the alternatives and we need to prepare teachers to train our students for the green jobs of the future.

Any schools wishing to host future training events should contact Brian Hurd: brian@handsonsolar.com or Greg Newhouse: gnewhous@sdccd.edu

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