



NORTH CAROLINA Solar Center

Advancing Clean Energy for a Sustainable Economy

North Carolina State University, Campus Box 7401, Raleigh, NC 27695 | 1 800 33 NCSUN | www.ncsc.ncsu.edu/RETDS.php

WORKFORCE DEVELOPMENT

About the Renewable Energy Technologies Diploma Series:

The ISPQ-accredited Renewable Energy Technologies Diploma Series (RETDS) is a non-degree continuing-education program that provides: technical and hands-on training; information on current policies and technologies; and a support network of experienced renewable energy professionals. Participants earn a non-degree diploma from NC State University. **In addition, the program can help meet required continuing education for professionals.** NC electrical contractors receive 24 credit hours toward their required continuing education. Architects, Professional Engineers, and LEED professionals receive 40 hours of AIA, PDHs and GBCI continuing-education credits, respectively. In addition, our entry level PV course, REPV and entry level solar thermal course, REST offer participants the opportunity to take the entry level NABCEP exam. Our advanced PV course, REPV (A), offers the required continuing education credits for NABCEP certified PV installers.

Training Program Qualities:

The Interstate Renewable Energy Council (IREC) accredits the highest quality RE training programs in the country via the Institute of Power Quality (ISPQ). The NC Solar Center's Renewable Energy Technologies Diploma Series (RETDS) is the only ISPQ accredited Training Program on the east coast between Maryland and Georgia.

The ISPQ also certifies Master Trainers. NCSU'S NC Solar Center Training Programs employs two of only four (50%) of the east coast ISPQ Master PV trainers in their RE Training Programs. Our Small Wind and Solar Thermal workshop instructors sit on NABCEP's small wind and solar thermal technical committees as technical experts .

The NC Solar Center Training Programs are housed under NC State's Universities' College of Engineering which confers a unique advantage over many similar training programs with respect to human resources, capital resources and cutting edge research.

Students can take one 5-day (40 hour) workshop to earn a certificate in a specific technology or take three 5-day workshops on different renewable energy technologies to earn an NCSU non-degree Renewable Energy Technologies Diploma. These workshops include 40 hours combined of technical theory and hands on labs. We offer our courses in a wide variety of subjects including intermediate photovoltaics, advanced photovoltaics, solar thermal systems, small wind systems and residential green building . This interdisciplinary approach gives the student a competitive advantage by having a wider scope of renewable energy technology education. The program and diploma affiliation with University hold a lofty weight with potential clients and employers.



28' x 48' 4/12 pitch training roof for photovoltaics and solar thermal hands-on training



A Skystream 3.7 on a 60 foot tower being lowered for training purposes.



A computer lab adjacent to the training field for software classes

This program is rare in that green building workshops are offered as one of several avenues to earn this diploma. This encouraged flexibility gives participants an opportunity to get an overview of green building implementation strategies and reconnects them to the interrelationship between renewables and energy efficiency as tightly coupled pieces that work in conjunction to promote sustainable practices in the built environment.

The coupling and integration of the hands-on lab component with the high level technical theory is paramount in our Training Program courses. The NC Solar Center Training Field boasts a 28' x 48' 4/12 pitch training mock roof used for in-class installation of both a fully operational grid-tied and battery-based photovoltaic system as well as a fully operational drainback and pressurized glycol solar thermal system. In addition, the training yard is equipped with a functional 2 kW Skystream 3.7 wind turbine used in our small wind courses. For larger system demonstrations in company dealer trainings, we also have a mock commercial roof. For those trainings where we need to be offsite we have designed and built a customized 20' long, 8' wide 3/12 pitch mobile PV trailer that accommodates both a fully operational grid-tied and battery-based photovoltaic system. This fully stocked hands-on training field is conveniently located adjacent to the McKimmon Conference and Training center. The proximity of the lab and conference space uniquely positions our training programs to carry on ISPQ accredited curriculum programs with ISPQ certified instructors in a conference setting while providing high-quality, real-life hands-on training for the ultimate learning experience.

In addition to our courses delivering top notch technical curriculum, top notch instructors and fully equipped hands-on facilities, we also offer the country's only in-house DSIRE (Database of State Incentives for Renewable Energy) team. Our in-house DSIRE staff tracks and updates all policy and incentives promoting renewables and energy efficiency on a local, utility, state and federal level for the entire United States on a daily basis. Our in-house DSIRE staffs provide a wealth of expertise in supplemental courses on renewable policy and incentives. In addition, our programs incorporate the DSIRE database real time feeds into an internally designed comprehensive financial calculator.

Project Partners: DOE

The Department of Energy is working on a nationwide, 5 year program aimed at disseminating quality solar programs throughout the nation by means of establishing widespread quality community college, code official, and financial manager training in Photovoltaics. This program also seeks to assess market needs for industry growth and pair this with these quality training programs to ensure a highly skilled workforce to meet the market demands. Nine Centers in the US are charged with this DOE Train the Trainer program. The NCSC Training Program is one of only 9 nationwide awardees. Our jurisdiction encompasses the Mid-Atlantic States of SC, NC, DC, MD and VA.

Training Program Reach:

Diploma Series participants come to us from all over the country. In addition, we have had Diploma Series grads (3 or more weeklong trainings) from Turks and Caicos, the Bahamas, Germany and Ireland. Our participants include, but are not limited to, electrical, plumbing, HVAC and general contractors, builders, architects, engineers, educators, policy makers, utility staff, company heads, financial managers, entrepreneurs and a number of other interested minds.

Valued by the business community:

Twenty five plus NC-based companies send their Renewable Energy and Green Building job openings to NCSC's Training Program to be distributed to our over 1,000 highly trained professionals because of the inherent quality of our ISPQ accredited Training Programs and the skills of those who complete it.

In addition to its workforce development training, NCSC's conference classrooms and hands-on training labs are offered as a high quality, well equipped, "one stop shop" for large solar and wind company dealer and installer trainings. SunPower Corporation, holding the world record for highest efficiency PV cell and among the top ten international PV manufacturers, conducts 75% of its east coast training exclusively at the NC Solar Center Training facilities. In 2011, DC Solar, Fronius and SolarWorld USA have joined our ever-growing company dealer training program.

Certificate in Renewable Energy Management

To best serve industry needs, our programs are constantly evolving. Coming in the spring of 2012, the certificate is a unique continuing education program for non-installers who work within the renewable energy industry. This program will address technology, policy and finance to give a multi-disciplinary, comprehensive approach for the burgeoning career of renewable energy managers. This series of courses will be taught by recognized industry leaders and technical experts. **For more information**, contact Lyra Rakusin at lyra_rakusin@ncsu.edu or 919.513.7769, or visit www.ncsc.ncsu.edu/CREM to sign up for updates about the program.