

Practice What You Teach: Green Jobs Training Center Goes Green

- Two solar projects to be installed at regional education center
- American made components for all systems



Creating the Future . . .

Covering a land area of 2,269 square miles, the Wayne-Finger Lakes (WFL) BOCES supports 25 school districts across four central New York counties. This area has a total population of 256,698 people, of which 44,733 are students. The WFL BOCES is . . . in a word . . . big.

Each year the WFL BOCES provides Career and Technical education to 1,110 students, and Adult and Continuing Education to 1,200 adults. It is within these capacities that the WFL BOCES extends 'green-collar' training to students and adults alike.

The New Vision Renewable Energy training program is offered as a one-year interdisciplinary program for senior high school students interested in exploring the technical, economic, governmental, and political aspects of designing and installing renewable and alternative energy systems. The course also is offered to adults through the WFL BOCES continuing education program.

Guided by certified installers and career professionals, students gain hands-on experience designing and installing residential and commercial-scale solar, wind, and geo thermal-powered energy systems.

Hands On Experience

Craig Logan, Principal at Wayne Technical and Career Center states "As Technical and Career Centers focused on providing training to future workers, green/sustainable systems fit perfectly into our plan. Teaching students about energy conservation in relation to their chosen career is a critical element of every program.

The New Vision Renewable Energy Program and the Building Trades/Electrical Trades and Continuing Education courses will use these installations as functional training tools to provide live demonstrations of renewable energy. The fact that these systems also will reduce energy costs at both schools allows our organization to transfer the savings onto our component districts, which translates into cost savings for New York State taxpayers."

Building American Business

The system components are of American manufacture, made in Boston, Massachusetts; Fremont; California; and Bend, Oregon. “It is critical that we buy as many American-made products as possible in all of our projects,” says Mr. Victor Solerno, CEO of O’Connell Electric, the firm installing the project. “Supporting American manufacturing, research and development, and technologies is critical to our country’s future success.”

Homegrown labor is also of vital importance. “Employing local labor is one of our priorities,” says Mr. Solerno. “Most of the workers we hire for an installation are residents of the local community. We also try to include an apprentice on each of our projects. I’m very confident that with the systems we have in place, and the research currently going into development, as a country we’re going to be well positioned when the system efficiencies soon take off,” says Mr. Salerno.

Mr. Logan confirms the importance of being “Buy American” compliant. “The requirement for local vendors and ‘made in the USA’ products is a win-win for the school and the community. Our programs depend on industry to provide consultation and guidance in order for our students to be kept up-to-date on industry trends. Both vendors have been very open and helpful in sharing the knowledge and procedures with staff and students. Requiring locally produced products creates a demand and much needed boost to the manufacturing sectors (which we partner with on a regular basis) that are trying to establish a stronger presence in this industry”.

Two Projects – Two Opportunities to Teach and Learn

50kW Solar Electric System

The WFL BOCES will install a 50kW Solar Electric System on the roof of the Early Childhood Education Building. With an annual production estimated at 55,640kWh, the system is expected to reduce electric consumption at the site by 43% and save approximately \$9,361 in utility costs each year.

Funded by a \$326,511 grant of American Recovery and Reinvestment Act monies distributed in New York State by the New York State Energy Research and Development Authority, the WFL is moving forward with a project that otherwise would not have happened. Mr. Logan adds, “Neither project would have been possible without the support of NYSEERDA. ARRA provided a significant opportunity.”

Beyond energy savings, the project will provide educational and environmental benefits to the community, which is extremely important to Mr. Logan and the administrative staff at the WFL. “Education, Education, Education ... Unlike private installations, the primary goal of these projects, from our perspective, is to help educate the public. The fact that they simultaneously provide an energy savings is secondary to the real goal of spreading the knowledge and supporting the growth of the industry.”

Over its 25-year life cycle, the solar system will reduce greenhouse gas emissions by 953 tons of CO₂.

Solar Combined Heat and Power System

Five solar thermal panels and 18 solar photovoltaic panels will comprise a new Solar Combined Heat and Power system (SCHP), which is the WFL BOCES' second American Recovery and Reinvestment Act project made possible by an \$119,121 grant from NYSEERDA.

The design is optimized to offset nearly 70% of the January heating load at the WTCC Modular Construction Building, the building currently used for building assembly training, and will combine with a heat pump to boost radiant floor temperatures to meet 100% of the building thermal load. The solar electric component of the system will be sized to cover the operation of the solar and radiant system pumps and the heat pump.

The external component of the system will face directly south, with minimal overshadowing, and will be located to the rear of the recently constructed building. Two short-term thermal storage components will combine and distribute outputs from the thermal sources, while a longer term storage component will be buried in the ground.

The WFL BOCES expects that both projects will coincide with green job training curriculum. "Both projects are a 1-1 match with curriculum goals on the campus. The solar thermal project at the Wayne Technical and Career Center is the next installment of a long list of NYSEERDA-sponsored projects that have been incorporated into the programs and curriculum. The Finger Lakes Technical Center's PV array will be the inaugural project to introduce renewable energy systems to the building trades curriculum on the campus," says Mr. Logan.

Training Offerings Expand

Uniquely positioned to offer education and training for the burgeoning green jobs market, the WFL BOCES also has paired with NYSEERDA to soon deliver Large Wind continuing education and certification programs for the Finger Lakes region. The training is to prepare students to earn nationally recognized certification in Large Wind, and the WFL BOCES will become the training institute with certified instructional staff for Large Wind in the Finger Lakes region.

Awarded funding for curriculum development, equipment, development of training and accreditation programs, a resource library, and many other program components, the WFL BOCES is working closely with NYSEERDA to develop programming for high school students and adults.

The WFL BOCES received these awards from the [U.S. Department of Energy's State Energy Program](#). The State Energy Program provides grants to states and directs funding to State Energy Offices from technology programs in DOE's Office of Energy Efficiency and Renewable Energy. States use grants to address their energy priorities and to adopt emerging renewable energy and energy efficiency technologies. SEP is distributing \$3.1 billion of funding to the states and U.S. territories under the [2009 Recovery Act](#)."