

Response to APLU State Energy Offices Relationship Request for Input
Helene Dillard, Director, Cornell Cooperative Extension
July 21, 2011

1. Briefly describe your relationship with your State Energy Office; explaining the program priorities, the role of each organization, and what value has been gained by working together. [Be brief, in most instances a paragraph will be great.]

Our state energy office is the New York State Energy Research and Development Authority (NYSERDA). Our relationship is mutually respectful and NYSEDA has frequently participated in CCE in-services and conferences as instructors and speakers. Our Office of Government Affairs brings NYSEDA representatives to the Cornell campus approximately once per year.

Our relationship with NYSEDA as a funder tends to be that of a provider bidding on contracts. We have a good track record with NYSEDA and are being awarded more contracts, and we have one long-standing contract to deliver energy conservation education (CEPREE) to homeowners and as part of an educational program on financial management for low-income families (EmPower). Those contracts are to a professor on campus, who distributes funds out to our Cornell Cooperative Extension (CCE) Associations. Three of our Associations have direct contracts with NYSEDA for energy conservation education through NYSEDA's Energy Smart Coordinator program. There are eight of these in NYS, serving multi-county regions. The contracts are multi-county and two of them were very recently awarded. Cornell University, including Cornell Cooperative Extension Administration, is part of the New York Energy Policy Institute, funded by NYSEDA.

In one of their visits to campus, in 2004, NYSEDA said that they mentioned that they have no contacts in the agricultural community and rely on Cornell and Cooperative Extension for that. At the time, Cornell had small contracts to evaluate on-farm methane digestion. Despite that comment, NYSEDA recently hired a private firm from outside the state to do outreach on energy conservation to farmers in NYS. They are asking us to cooperate with them, but are not offering any funds to do so. We are doing some very limited promotion for them.

The New York Public Service Commission (PSC) is an important energy partner in New York State and should be considered in the strategy being pursued. In the past year, the PSC seems to be duplicating NYSEDA residential energy conservation programming, issuing a contract to a private organization. CCE was not considered for that contract. We have applied for subcontract funds, but none of the applicant CCE Associations have been notified of decisions, after approximately 6 months. The delay seems to be due to funding issues. CCE again is being asked to participate without any funding being offered.

2. What if any sharing of funding and/or personnel occurs between Extension and the SEO? Is so, who does that work?

CEPREE and EmPower are contracts between a campus professor in the College of Human Ecology. That professor distributes funds to educators in our Associations. The Energy Smart Coordinator contracts are directly between CCE Associations and NYSERDA. Those contracts are carried out primarily by educators in the county CCE Associations.

The NY Energy Policy Institute is based at another university that will subcontract to Cornell University or CCE as appropriate. Most of that work probably will be done by faculty on campus.

3. How do you know the results of this collaboration are worthwhile?

There is some evaluation done by the CEPREE, EmPower, and Energy Smart Coordinator programs that shows good reach into NYS communities. Our CCE State-wide Energy and Climate Change Team is working with our Cornell Office of Research on Evaluation to develop evaluation plans for that team's work. Some of the evaluation may measure the CEPREE, EmPower, and Energy Smart Coordinator programs, as well.

With respect to the relationship with NYSERDA, we are becoming better known and although it is not ideal to be asked to participate without funding, we have become well regarded enough to be considered a player when programs are underway. The relationship is growing.

4. As Dean/Director what did you (or do you) do to support direct relations with your SEO?

As Director, I asked our Office of Government Affairs to help enhance our relationship with NYSERDA, including by having CCE representatives involved when NYSERDA is brought to campus. I provided letters of support, as well.

5. Contact Person (name, phone and email)? If I have additional, more detailed questions, who do I follow up with.

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Examples of Cornell Cooperative Extension energy programming

Cornell Cooperative Extension – Tompkins County Energy and Workforce Development

The Energy Corps leadership education program has trained 53 student interns in the past two years, including training in partnership with local Building Performance Institute-accredited contractors in building science, energy diagnostics, home energy assessments, and communication. Energy Corps members gain leadership skills and practical experience in home

energy efficiency that leads to jobs after graduation. Out of six graduates, four have been hired in energy-related jobs, two with energy-auditing companies – even with no experience prior to joining the program. One former Energy Corps member who was hired on the energy audit team of a professional energy services company said, “I credit this internship experience as the one that best prepared me to enter the job market after college.”

Another said, “I was the only person among the people they interviewed who knew how to set up and operate a blower door. I was ahead of everyone else among the new hires.”

Three components must be in place for energy efficiency job opportunities: market demand, financing, and workforce development. The Energy Corps leadership education model is a systematic approach for strengthening all three components.

The Energy Corps model is being spread throughout the region. Five counties have Energy Corps programs starting or already underway:

- Tompkins (Tompkins Energy Conservation Corps)
- Chemung and Schuyler (Retired Senior Volunteer Program)
- Broome (energy efficiency workforce development), and
- Chenango (The Place's AmeriCorps program).

The City of Binghamton green jobs taskforce is working to adapt the Energy Corps leadership education model as an energy efficiency workforce development strategy. The City has put \$166,000 on the table for leadership education program. The program will enable people in communities of color to be trained.

Other efforts include the convening of a workforce summit pulling together over 20 workforce development professionals, contractors, and educators to work on integrating energy efficiency related job development.

In the City of Ithaca, the Rebuilding The Wall program is partnering with Calvary Baptist Church in downtown Ithaca to aggregate demand for home energy efficiency upgrades, coupled with workforce training for people of color interested in pursuing training and work as energy efficiency contractors.

Another approach: CCE-Tompkins is taking on energy efficiency workforce development and job creation in the commercial lighting market assessment. CCE is building demand to identify the size of the commercial lighting market, and the information will be shared with local contractors. Contractors of color are being recruiting to be trained to complete the upgrades. CCE-Tompkins has conducted survey with energy efficiency contractors that will inform the work.

4-H Youth Development Energy Smart Camp\$ and Camper\$

In 2010, Cornell Cooperative Extension began developing an energy conservation and renewable energy program for youth attending 4-H summer camps. Eight of the nine 4-H Camps participated in the Energy Smart Camp\$ and Camper\$ program. Training was conducted on June 5 for program coordinators from each camp. Camps then conducted the program with on average two Counselor-In-Training (CITs, typically aged 14 to 16 years) sessions during the summer for a total of 16 sessions or 128 CIT's. Through education, exploration, and investigation the CIT's worked with the campers to assess the energy consumption at our camps. At the end of each CIT session the CIT's presented their findings and recommendations to key leaders of the camp. These leaders included Camp Directors, Camp Managers, Executive Directors, Board of Directors members, and some county government officials. Each camp has instituted at least two changes to the way they operate to conserve energy based on the CIT recommendations. Campers participated in the survey and assessment pieces that were conducted by the CIT's. A rough estimate is 1,600 campers.

In 2011, all nine of our 4-H camps participating in the project. The camps have four solar energy labs that we are sharing between the nine camps. We are hoping to have more built so that each camp can have one. In 4-H Camp Wyomoco, the camp staff has instituted an aggressive recycling program in camp, a green day where there is no electricity used in cabins, and they have completely eliminated the use of disposable dishes and utensils.

Cornell Cooperative Extension of Oneida County Vernon-Verona-Sherrill Central School District

With what is almost certainly the biggest student-run maple syrup operation in the United States, Vernon-Verona-Sherrill Central School District has been spreading the gospel of the sugarbush since 1992. That year, the VVS sugar house made 27 gallons of syrup. In 2011, they produced more than a thousand gallons (from about 3500 taps on more than 150 acres owned or leased by the school district). Keith Schiebel, agriculture teacher at VVS High School and FFA advisor (formerly, Future Farmers of America), created the program as a way to focus Ag-in-the-Classroom activities around one product. In 2011, Schiebel had 176 students in the program.

Mary Wrege, a Renewable Energy Educator with Cornell Cooperative Extension of Oneida County, saw a potential opportunity and solution. She approached Schiebel in July 2008 to pitch a far-reaching idea: to work with researchers to establish school-based research plots of biomass crops that could be used as potential fuel sources for the evaporator. This would not only replace the school district's use of oil in their syrup production but would help field demonstrate a small-scale closed-loop renewable biomass system complete with a "biomass lab" at VVS. The school district, and, more importantly, students in the Ag program, would be involved in growing, harvesting, processing, and burning the biomass on-site (or at least nearby). Additionally, through their management and oversight of the biomass lab, the students would gain important knowledge and specific skill sets that would be useful for a variety of related careers in the emerging field of biomass utilization.

Situated roughly midway between Syracuse and Utica, VVS School District isn't far from several experimental biomass field trials established separately by the State University of New York's

College of Environmental Science and Forestry and Cornell University. SUNY ESF researchers have been particularly interested in shrub willow, while Cornell researchers have focused on perennial grasses, including switchgrass, both of which grow well on marginal, poorly drained soils. The strategic location of the site also makes it a valuable resource for farmers and growers in the Central New York region who may be interested in or have questions about renewable bioenergy crop opportunities.

Wrege introduced Schiebel to Dr. Larry Smart, one of the preeminent genetic researchers of shrub willow, (who was then at SUNY ESF and is currently with Cornell) about establishing a trial on property owned by the school district. Smart and his colleagues at SUNY ESF, Dr. Timothy Volk and Dr. Larry Abrahamson, saw both the research and educational value of having a field trial hosted at a school with such a strong ag program. In the fall of 2008, with student and local farmer support, the school district prepared the field. In May 2009, the researchers and students planted eight varieties of shrub willow on about 3.3 acres of marginal land near the campus shared by the district offices, the high school and the middle school. Wrege then worked with Cornell researchers Dr. Donald Viands, Dr. Hilary Mayton, and Dr. Julie Hansen, to coordinate the planting of another acre of switchgrass on an adjacent field shortly thereafter. A third biomass energy crop, sorghum, was planted by Dr. Sharon Mitchell of Cornell in 2010 on two adjacent plots totalling about 1 1/4 acres that were cleared of overgrowth locust trees and shrubs.

As of May 2011, Schiebel was waiting to hear back about a USDA grant he had submitted with support from Wrege and Dr. Smart to help purchase equipment, including a biomass boiler that would replace the program's existing oil-fired boiler. Ultimately, Schiebel would like to chip the willow and pelletize the switchgrass and sorghum and burn them in a closed-loop system that would have nearly all inputs and outputs coming from the school district's land or nearby land it leases.

The willow that was planted in spring 2009 was coppiced, or cut back, that fall to initiate more vigorous growth. It resprouted in the spring of 2010 and is scheduled for a first harvest in the winter of 2012, which will coincide nicely with the sugaring season. The shrub willow can be harvested every three years thereafter, with a total of seven cycles possible before replanting is required due to significantly decreased yields. Switchgrass takes three years to fully establish the stand, so the first significant harvest is scheduled for the fall of 2011. The VVS ag program is exploring options and methods to pelletize the sorghum and switchgrass crops.

In the few years since the project was hatched, Wrege and Schiebel have been busy spreading the word, including organizing media events, writing articles for the local newspaper, giving tours of the plots, meeting with area farmers and growers, as well as bringing in important stakeholders from across NYS and beyond. Within the next couple of years, they, along with the researchers, hope to be able to demonstrate the many benefits of a closed-loop biomass-based renewable energy system, while giving hundreds of young people a hands-on education on all aspects of the process-and producing a delicious and profitable crop!

Marcellus Shale Development and Energy Transitions

New York State overlies potentially highly productive shale formations that continue to be developed for natural gas. Some of the techniques used to extract natural gas from the low-permeability shales are under scrutiny for their environmental and socioeconomic impacts. As energy companies began sending landmen throughout the southern tier of New York State, following similar activities and shale development in Pennsylvania, residents began demanding information and explanations. Cornell Cooperative Extension was mobilized by faculty on campus, the Cornell Regional Development Institute and the Paleontological Research Institute in particular, to prepare and deliver educational programming on gas leasing issues and on development of the shales. The effort has evolved a multi-disciplinary research program, as well, including impacts of the substances used in the gas extraction process, impacts of land fragmentation, water withdrawals, socioeconomic changes, both positive and negative, and finally, an effort to look at the transition from fossil fuels to renewable fuels and the role of natural gas in that transition. Cornell Cooperative Extension has become a go-to name with respect to this issue and is partnering with other land grant universities, the New York State Department of Environmental Conservation, and the New York State Energy Research and Development Authority.