NYS Homes and Community Renewal
Weatherization Assistance Program

American Recovery and Reinvestment Act State Plan Amendment
Sustainable Energy Resources for Consumers
October, 2010

In September, 2010, the Division of Housing and Community Renewal (now New York State Homes and Community Renewal, or HCR) was notified by the US Department of Energy (DOE) that it had been awarded an additional $1,310,391 in American Recovery and Reinvestment Act (ARRA) funds, in response to a Sustainable Energy Resources for Consumers (SERC) proposal submitted by the Division earlier in 2010. DOE requires that states amend their ARRA State Plans prior to accessing this funding. This amendment describes the work that will be undertaken with SERC funds and provides certain other information required by DOE.

1. Budget

Subgrantee	Allocation	Administration	Program Operation	Units	Cost Per Unit
Chautaqua Opportunities	$ 200,000	$ 10,000	$ 190,000	17	$ 11,765
Cattaraugus Community Action	$ 787,000	$ 39,350	$ 747,650	66	$ 11,924
Tompkins Community Action	$ 323,391	$ 15,400	$ 307,991	27	$ 11,977
Total	**$ 1,310,391**	**$ 64,750**	**$ 1,245,641**	**110**	**$ 11,324**

2. Budget justification – New York State will undertake SERC activities to expand the Weatherization Assistance Program for materials, benefits, and renewable and domestic energy technologies not currently covered in the program. These projects will be implemented by Cattaraugus Community Action, Chautauqua Opportunities, Inc., and Tompkins Community Action.
3. Annual File – the "Annual File" sections of the approved ARRA State Plan are amended as follows:
    a. II.3 Subgrantees – the following subgrantees will be allocated SERC funding:
        1. Cattaraugus Community Action, Olean, NY: $787,000, to assist a minimum of 66 units
        2. Chautauqua Opportunities, Inc., Mayville, NY: $200,000, to assist a minimum of 17 units

3. Tompkins Community Action, Ithaca, NY: $323,391, to assist a minimum of 27 units

b. II.4 Production Schedule – Total funds for program operations are estimated at $1,245,641, with an overall cost per unit not to exceed $12,000.

c. II.9 State Plan Hearings – A hearing is scheduled for October 19, 2010. Public comments on the plan will be accepted through October 27, 2010.

d. II.11 Miscellaneous. Please see the following items:

1. Type of Work -

Participating subgrantees will integrate solar thermal water heating systems, vertical turbine wind generators, grid-tied photovoltaic systems and geothermal heat pump systems into their existing programs. SERC funds will only be used for activities that are not otherwise eligible for regular Weatherization Assistance Program funding.

Cattaraugus Community Action (CCA) will install a solar thermal water heating system that is regulated by a pump station that circulates a heat transfer fluid through a solar collector located on the roof or outside the structure, which passes through a heat exchanger tank inside the building. The systems collect incoming solar radiation from the sun and transfer it into usable heat energy at the expense of the electric used to run the pump station.

CCA will install technologies such as evacuated tube systems that are appropriate for their regional climate, and are "user friendly" for their clients. They will incorporate measures into multifamily structures on small, mid, and large scale projects to serve communities of all sizes.

Local contractors that employ trained professionals will be utilized to install larger systems. This will provide real world experience for technicians as well as training and employment opportunities for individuals engaged in these projects. Furthermore, it will guarantee employment for technicians already trained and working in the field. Local supply companies may also provide materials for these projects through bulk purchasing.

CCA will assist a minimum of 66 units, but may ultimately assist up to140 multifamily units and an additional 10 single family residential structures, depending on actual implementation costs.

Chautauqua Opportunities, Inc. (COI) will install solar thermal hot water tanks in a minimum of 17 homes. The systems will utilize an indirect heating, anti-freeze closed loop design, compatible with the climate of western New York. Included in the installation will be appliance meters to monitor the electrical utility usage of the system, which will be limited to pump operation and back up to the solar heating. COI will then collect the data and use it for comparative analysis and return on investment statements.

Participants for the project will be chosen from families receiving traditional energy efficient renovations funded through the concurrent Weatherization contract. The solar systems will only be installed in single family, owner-occupied homes. In addition, recipients must agree to allow COI intermittent access to collect the appliance meter data. Participation in the project will only be offered after the initial audit determines that the home's physical layout will maximize the effectiveness of the solar thermal system, including orientation of the roof, shading, and location of the utility room in relation to the potential solar collection point.

As there are no certified installers of solar thermal hot water systems located in Chautauqua County as identified by the American Solar Energy Society, COI will have two of its Weatherization crews trained in the installation of the systems. Creating this capability internally also stabilizes the sustainability of the project, insuring the continued capability of local installation after funding has been discontinued.

In addition to partnering with private entities, COI will also meet the other DOE project priorities. By installing appliance energy meters, COI will be able to compare the estimated energy savings to actual savings and report on both the effectiveness of the systems as well as the actual energy savings results of families served. By providing installation, COI will also be responsible for warranty work and available for necessary repair work, allowing for additional tracking of overall effectiveness of the project.

This project, as conceived, has a high potential for internal expansion and external replication. Given adequate funding, COI would easily be able to train its entire weatherization staff and begin offering solar hot water tanks in every house that met feasibility guidelines. Other Weatherization sub-grantees should easily be able to replicate the installation model proposed, as most sub-grantees use their own staff to audit and weatherize. The data gathered from the actual energy usage can be used to gather baseline data, establish feasibility guidelines throughout the nation using the solar energy factor of the system, BTUs per square foot of solar radiation, utility costs, energy costs, and average water use per person.

Tompkins Community Action (TCA) will install a solar domestic hot water system in a multifamily building and will assist a minimum of 27 units. The project will be supervised by an engineer and bid to a subcontractor, with hands-on training provided for TCA staff, building owners and occupants, and job training participants. Solar installation will occur along with standard weatherization, which be funded with existing ARRA weatherization funds.

Vertical Wind Turbine Generators:

Cattaraugus Community Action will install vertical wind generators on single-family residential units to reduce, or eliminate the cost of electricity to clients, employ specialized technicians, and increase public awareness for the need and demand of alternative energy systems.

Investigation into the matter has yielded information that supports this climate region as being favorable for the technological installation. The unit in question, the 1.2 Kw Windspire, is a lower cost unit that is applicable for residential

and small multifamily structures with the option of coupling multiple units together for greater production. The unit has a production cut in speed of 8 mph wind speeds and produces an estimated 2 Megawatts annually.

Again, subcontracting services have been investigated and yielded positive response. As this is still a cutting edge technology, we would like to engage only a few locations in the installation of these units and closely monitor their effect on clientele.

Grid Tied Solar Photovoltaic Panel Systems:

Cattaraugus Community Action will consider installation of solar photovoltaic (PV) systems comparable to the vertical wind turbines as another means of energy production in their area. Due to geographic constrictions, considering PV on a site by site basis will offer another means of energy production in addition to vertical wind. These systems will be appropriately-sized and typically used on rooftops (although possibly as parking shade structures in multifamily applications), or will be a 60K or smaller unit installed on the ground within the boundaries of an existing facility.

Incorporation of PV into the regular weatherization program is a potentially more widespread solution to energy needs than vertical wind and will allow technicians to serve more clients in their region. This does not discount the possibility of vertical wind as a means of renewable energy, or in conjunction with PV, it is simply a more sensible and economic alternative measure.

Geothermal Heat Pump Systems:

Cattaraugus Community Action will also consider installation of geothermal heat pump systems for domestic heating in very specific applications on multifamily structures or large occupancy single family homes that already using hot water based heating systems, and where the geothermal system would not otherwise provide a savings-to-investment ration of 1.0 or higher. Local case studies have indicated that these systems, in conjunction with weatherization services, can drastically reduce the fuel consumption of residences, particularly during winter heating months. Any geothermal heat pump system installed with SERC funding will have a 5.5 tons or less and will be a horizontal or vertical ground, closed-loop system.

2. SERC Monitoring of Projects – SERC projects will be monitored as part of our overall monitoring of subgrantee activities. Each subgrantee will receive an on-site monitoring visit approximately once every two months. At least 10% of completed SERC units will be inspected by HCR staff.

3. SERC Training and Technical Assistance – subgrantees will be allowed to use a portion of their grant funds for training and technical assistance (T&TA), and encouraged to seek out appropriate T&TA for the types of work being performed. TAITEM Engineering, a training and technical assistance firm currently under contract with HCR that has expertise in installation of alternative and renewable energy systems, may also be utilized to provide assistance to subgrantees participating in this initiative.

4. SERC Evaluation and Energy Savings – Subgrantees will be encouraged to install energy monitoring systems and utilize other means to enable evaluation and track savings.

5. Moderate-Income Eligibility – It is currently anticipated that only Weatherization-eligible households (below 60% of state median income) will be assisted. However, HCR reserves the right to expand the initiative to moderate-income households with prior approval of DOE.

6. Geographic Areas to be Served – the SERC projects will be located in Cattaraugus, Chautauqua and Tompkins Counties.

7. Client Education – Each subgrantee will be prepared to provide owners and managers of assisted properties with guidance on the safe and effective operation of the measures installed with SERC funds, as well as general education on saving energy.

8. Energy-Related Health and Safety Costs – Energy-related health and safety costs will be limited to 10% of total cost-per-unit for each assisted project. It is expected that actual costs in this category will not approach this limit.