

# Aggregation of Public Housing for Energy Efficiency

<b>1. Projected Program Budget</b>	\$	<b>1,363,569</b>
<b>2. Projected Program Impacts</b>		
MWh		n/a
MW (Summer Peak)		n/a
<b>3. Program Cost Effectiveness</b>		
TRC		n/a
PAC		n/a

## 4. Program Descriptors

Market Sector:	Non-Residential
Program Classification:	Local
Program Status:	New

## 5. Program Statement

The program will use aggregation to bring efficiency and energy savings to a market that has been traditionally ignored: small and medium-sized public and assisted housing agencies (containing 1,200 units or less).

## 6. Program Rationale

- 1) Aggregation creates significant opportunities for energy efficiency upgrades. By aggregating individual agencies into larger, more concentrated groups, this large, underserved market will be better able to implement energy-efficiency and demand-reduction strategies using energy performance contracts and traditional energy management services. Aggregation can be very successful, but it is often difficult for small housing agencies to research, staff and lead such efforts. The proposed project essentially creates a project team of housing energy experts that can educate, organize and coordinate the aggregation process up to a point where the aggregated agencies become attractive investments for energy services companies (ESCOs), can leverage their net assets to finance significant energy upgrades, or can leverage their purchasing power to gain access to better bulk purchase agreements.
- 2) A further innovation of this program will be to aggregate building-specific greenhouse gas emissions, which are generally not marketable, into a large pool of risk-diverse credits that is attractive to investors on the international market for greenhouse gas reduction credits. In doing so, the program will use typical energy efficiency performance contracts at the front end to leverage additional resources through the climate market at the back end. Research has shown that small-scale emissions reductions have virtually no value as “carbon credits”— but when aggregated, they could be combined with ESCO contracts to unlock value that has gone untapped in the energy efficiency

retrofit market. This innovation could make performance contracts even more financially attractive to both housing agencies and their ESCO partners

## **7. Program Outcomes**

The Project Team will provide the small and medium public and assisted housing market segment with advanced regulatory and policy knowledge, particularly of publicly assisted housing agencies, and with proven strategies for integrated funding strategies using energy savings to provide capital repairs and operating cost reductions. Housing agencies frequently aggregate with peers to share knowledge and leverage capabilities and the program will make the most of these naturally occurring relationships. In addition, because they are also conduits for federal and state funds deployed locally, housing markets provide additional access to numerous other small assisted-housing providers and stakeholders without further marketing and outreach.

## **8. Program Strategy**

The program will help aggregated groups capture lost opportunities and implement more efficient technology using energy financing from performance contracting, operating cash flow and capital reserves, bulk procurement techniques, aggregated energy commodity purchases and sales of greenhouse gas emissions reduction credits, and other energy management strategies.

- ***Market to and recruit housing agencies*** by attending state and regional housing conferences, by working with association leaders, and by using direct sales, mailing, and other marketing/sales strategies.
- ***Screen and aggregate potential program participants*** and provide assistance to enable them to finance retrofits with third-party energy services firms or through internal net operating cash flow and capital reserves. Aggregation will focus on the geographic and financial feasibility of customers, becoming a solution to the administrative challenge of working with small housing agencies.
- ***Help each aggregated group assess its physical needs, potential efficiency dollars saved and invested, and procure ESCOs*** for performance contracts. The Project Team will develop specifications for efficient products, A/E firms and professionals, and construction contractors to help those aggregated and individual housing agencies interested in managing their efficiency enhancements internally. When needed, the Project Team will also provide technical assistance to interested agencies on energy management and commodity purchases.
- ***Complete verification and final reporting***. For projects constructed under energy services companies, we will evaluate measured energy, true up reports, and compile program impacts. In other projects, the Project Team will maintain contact with agencies and owners until construction is complete and will calculate savings.
- ***Use a web-based tracking system*** to facilitate communication with recipients of technical assistance, track and report energy efficiency performance metrics, and manage and report project financials.

## **9. Program Objectives**

Energy and peak demand savings goals are 7.05 million kWh and 1,529 Net kW by the end of the second year. To achieve this, the Project Team work to get up to 25 housing agencies started with retrofit projects impacting 5,000 apartments and 15 small offices in the first year, and up to 75 agencies started with retrofits of 15,000 apartments and 45 small offices by the end of the second year. Equipment installed will include interior and exterior lighting, refrigerators and electric domestic hot water heaters, DX air conditioning systems, and heat pump heating systems. Envelope upgrades such as windows and insulation are less common but will be completed where an opportunity is offered.

The project aims to sell carbon credits for approximately 10,000 tons of avoided CO<sub>2</sub> by the end of 2007.

The Project Team anticipates educating up to 500 housing agencies through marketing & outreach efforts and through participant training on energy efficiency strategies and achieving greater affordability for their tenants. This education and outreach component of the program will include knowledge of energy management, equipment options, commissioning, and bulk procurement strategies.

## **10. Program Implementation**

### **TASK 1 - Make Necessary Changes and Adjustments to Contract Documents and Procedures**

This will occur after negotiations and bid clarification.

### **TASK 3 - Build the Tracking System for the Project (Task 3)**

With SCE approval, the Project Team will develop a systems based on Siebel's CRM On Demand Tool (or equivalent) to manage and track the daily, monthly, and annual progress of the Project team and customers served by the program.

### **TASK 4 - Develop Final Marketing Materials and Approach (Task 4).**

A two-stage Marketing approach will be used. In Stage 1 the focus will be to use mail, telephone, and email and direct engagements efforts to identify and enroll program participants. In Stage 2 the Project Team will focus on disseminating results of the program, A Marketing Plan will be prepared for each stage, including segmentation and targeting strategies, marketing message, and events/channel marketing approaches. Materials will be prepared and necessary SCE approvals will be obtained.

Project Team members will be trained on all SCE requirements as well as internal procedures. Team training and procedures will be developed to achieve and ensure quality results and effective reporting.

### **TASK 5 - Implement the Two-Part Marketing Program**

In Stage I of the Marketing Program, the Project Team will conduct marketing and recruit customers by 1) speaking at housing industry events, 2) working through

industry leaders and association contacts; 3) making direct targeted calls to local housing agencies in SCE territory, and 4) working through industry stakeholders such as HUD and DHCD.

Recruiting will be most intensive during the first three to six months of the Project and will continue at a maintenance level through Year 2. We will speak directly with key decision makers and present program advantages and outcomes.

Interested customers will respond to marketing. A Program Representative will be assigned to each interested customer.

In Stage 2 of the Marketing Program, the Project Team will document program results and accomplishments. We will prepare and place products such as Case studies, articles, and presentations which will be disseminated through email broadcasts, industry web sites, association events, and other venues.

**Deliverable(s):**

- Mailing of printed marketing materials (3 mails of approximately 300 pieces/ mailing)
- Telephone call follow-up (up to 2 calls to approximately 300 people)
- Attendance at conferences and meetings (5-7)

**Due Dates:**

- Mailing of printed marketing materials (2nd, 4th, and 6th quarters of contract)
- Telephone call follow-up (on week following mailings)
- Conference attendance as necessary

**TASK 6 - Enroll Customers**

The Project Team will screen interested customers to determine 1) the extent of its energy savings opportunity, and 2) their fit for the program. The initial screen will include telephone discussions or other contacts to discuss types of buildings, recent modernization activities, utility costs and any previous reduction strategies. Because housing agencies with existing portfolios have ongoing modernization and maintenance needs, efficiency projects must be integrated into their current planning needs. For example, equipment or systems such as window replacements that are needed to improve egress or repair a building condition are important targets for efficiency improvements. In this example, the first cost for the window is borne by the housing agency and already allocated in their budget but savings from the replacement can be further increased through efficiency improvements. Projects will also generate non-electricity benefits from gas, water, sewer, and maintenance that will generate significant savings and will assist to finance longer payback electricity measures. Agencies that have these other savings sources will also be identified as potential candidates.

Customers interested and able to benefit from performance contracting, will be aggregated to assemble an attractive portfolio of retrofit measures, energy demand

reductions, and accompanying emissions reduction credits. The resulting project will be solicited for bids from energy services companies. Target groupings of at least 600 to 1,000 housing units will be assembled.

If the customer seeks to use its own capital or operating funds to perform the work, the Project Team will work with the customer to specify products that maximize SCE incentives. Assistance will include benchmarking of utility bills, walk-through audits, and other techniques, as appropriate. Aggregation will be performed to reduce the travel distance between participants for access by services providers and to increase their buying power for lower cost installations.

Additional work will not be pursued with customers determined during this screening not have adequate savings potential or be a good fit for the program.

The Project Team will develop and obtain sign offs on an MOU that defines the aggregation relationships.

#### **TASK 7 - Provide Technical Assistance and Install Measures**

The Project Team will provide technical assistance and due diligence for participating customers.

An RFP will be developed and issued for aggregated portfolios to attract energy services companies. The Project Team will review proposals, audit contracts, and energy services agreements for the participating agencies. In projects not utilizing performance contracts, the Project Team will review plans, engineering specifications, and procurement documents to assist agencies in making more efficient selection and implementation of energy technologies. The Project Team will also support owner's issuing RFPs for construction or A/E services and other project implementation requirements.

Where appropriate, the Project Team will also assemble procurement documents for bulk equipment purchases, energy management services or commodity purchases for aggregated agencies. The Project Team will also act as a strategic advisor to the aggregated agencies (and their ESCO partners as appropriate) to link them with brokers operating in the worldwide emission reduction credit markets. Specific tasks will include structuring measurement and verification protocols for emissions reductions credits that satisfy the legal requirements for tradable commodities and negotiating forward contract terms with emission credit brokers.

#### **TASK 8 - Perform Inspection and Oversight**

For customers using performance contracts, ESCOs will be required to commission projects, and report on the results of its own construction inspections. The Project Team will also inspect a sample of completed units.

For customers not using performance contractors, the Project Team will educate and train participants to complete internal project commissioning and inspections or hire a

project engineer to do this work to complete this work. The Project Team will review plans and inspect a sample of completed units.

Installation defects will be identified and remedied through commissioning and inspection. Defects will be the responsibility of the trades contractors selected by the owners. The Project team will facilitate a process to resolve complaints but will not be direct installers of equipment nor have any direct contractual agreements with vendors. (Tasks 9, 10, and 11)

The Project Team will implement an escalating system to address any customer complaints about program implementation. Every attempt will be made to resolve problems at the lowest possible level (i.e. closest to the customer) in the delivery chain. The SCE program manager will be the final decision maker in the complaint resolution process.

#### **Task 9 – Remedy Installation Issues**

Installation defects will be identified and remedied through the commissioning process. Construction defects such as missing equipment, poor installation quality, and broken or non-operating equipment will be repaired by the trades' contractors performing the services. The Project Team will work with project participants to facilitate communication and ensure repairs are completed as required and within contractual requirements.

#### **TASKS 10 AND 11 - Determine and Address Customer Satisfaction**

Customer satisfaction will be primarily through Customer Satisfaction Surveys developed and conducted by the Project Team or a third party organization hired by the Project Team. The surveys will be completed in two stages – 1) Interim performance survey and 2) a Post-Project Assessment.

If surveys discover issues that have not yet been effectively resolved, the Project Team will find a resolution to customer concerns as discussed in Task 9 above.

#### **TASK 12 - Invoices to SCE**

The Project Team will provide SCE with invoices on a monthly basis. These invoices will provide a clear and visible tie in of all budgetary cost items and supporting documentation. The expenditures will provide a direct tie in for energy savings results or information services rendered.

#### **TASK 13 - Provide Program Reporting**

The Project Team will provide monthly regular reports at the same frequency as our invoicing consistent with the plan described in the attached workbook. This report will include a) the invoice; b) the E3 Calculator/Workbook, and c) the flat files generated by our tracking system that validates reported energy savings.

An Annual Summary Report will be provided to SCE by December 31, 2006.

**Deliverable(s):**

- The Project Team will submit Monthly Summary Reports that include a current program narrative, an updated flat file, and updated E3 Calculator and Budget Workbooks.
- Annual Summary Report
- The Project Team will submit ad hoc reports upon request by SCE or CPUC.

**Due Dates:**

- The Project Team will submit Monthly Summary Reports electronically during the first week following the end of each month.
- The Project Team will submit Annual Summary Report to SCE by January 2007 for the first year of project activities.
- Ad hoc reporting due dates will be determined by the Project Team and SCE when each request is made.

**TASK 14 - Ramp Down Stage**

A two step process will be used to ramp down the program

- Stop program marketing in September 2007.
- Stop technical assistance/project facilitation by December 31, 2007. Some technical assistance or help with contracting issues may be required up until the last day of the project, however every effort will be made to have all implementation work complete by mid-December.

In addition, the Project Team will develop and market the Emissions Credit Package that will be required to attract carbon credit investors.

**TASK 15 - Shut Down Stage**

Shut down program operations by December 31, 2007. At this point customer services and installations will cease.

**TASK 16 – Miscellaneous CPUC/Utility Data Requests**

Ad hoc reporting will be provided on an as-needed basis to meet SCE and CPUC data requests and needs. These data requests may involve auditing of data as related to these requests.

**TASK 17 - Follow-up with Remaining and New Customer Issues**

During this period the Project Team will continue to follow-up and resolve customer issues to the end of the purchase order performance period. In addition, the Project Team will provide SCE with guidance and recommendations on how to deal with warranty issues after the end of the contract. Construction and manufacturer warranties will continue as per their individual contracts with owners and are typically one year from date of service.

## **TASK 18 - A Final Report will be prepared**

The program will wrap up with submission of a final report. This report will address a) Program Achievements; 2) Program Challenges; 3) Goal Attainment; 4) Lessons Learned; 5) Program Improvement Recommendations; 6) and Proposed Program Next Steps.

### **11. Customer Description**

The program is designed to serve owners and managers of federally subsidized and federally assisted housing. These agencies may be non-profits, affiliated with local government, state-chartered agencies, or private owners.

### **12. Customer Interface**

The project team will aggregate customers and assemble teams of professionals. The relationships will be managed through a formal Memorandum of Understanding. In addition, an extranet will provide project stakeholders including technical assistance recipients, project sponsors, and project team members with access to a secure, password-protected workspace. The Project Team will use the tool to share project documents, facilitate dialogue, coordinate schedules, track project milestones, and report project progress. This will include written narratives on project challenges and progress.

### **13. Energy Measures and Program Activities**

#### **13.1. Measures Information**

Non-Resource

#### **13.2.1 Energy Savings and Demand Reduction Level Data**

Non-Resource

#### **13.3. Non-energy Activities (Audits, Trainings, etc.)**

The program team will provide guidance to:

1. Aggregate needs
2. Assemble a qualified implementation team
3. Assist in securing project financing.

#### **13.4. Subcontractor Activities**

Global Green USA will assist in project design.

Facility Strategies Group will perform energy audits.

Forum One Communications will develop and manage web-based applications.

#### **13.5. Quality Assurance and Evaluation Activities**

See Tasks 8, 9, 10 and 11 above.

#### **13.6. Marketing Activities**

See Task 4 above.