

# Lighting Energy Efficiency with Demand Response Program (LEEDR)

<b>1. Projected Program Budget</b>	\$	<b>2,973,950</b>
<b>2. Projected Program Impacts</b>		
MWh		10,994
MW (Summer Peak)		3.79
<b>3. Program Cost Effectiveness</b>		
TRC		1.14
PAC		1.65

## 4. Program Descriptors

Market Sector:	Non-Residential
Program Classification:	Statewide
Program Status:	Revised Existing

## 5. Program Statement

The LEEDR program plans to implement new and emerging lighting technologies in the small commercial market and into the governmental, educational, and commercial office sectors. The program will also be testing General Electric's Wireless Lighting Management system to provide wireless dimming for existing lighting systems using less energy.

In conjunction with these technologies, the program will also implement EnergySolve's Utility Bill Analysis and Reporting ("UBAR") system to measure precisely the energy efficiency savings, customer dimming and demand response savings resulting from the installation of dimmable lighting technologies. They will also use a new wireless meter and software to control the wireless dimmable lighting systems and turn off other devices to reduce kWh and demand charges.

## 6. Program Rationale

This program will significantly reduce both energy consumption and peak demand through the installation of new and emerging lighting technologies. In addition, Energy Solve provides traditional or proprietary financing for customers and guarantees that periodic usage payments will be paid from savings, increasing the feasibility for customers.

## 7. Program Outcomes

This program will allow lay the foundation for further expansion of energy efficient technologies into the small commercial markets as well as the governmental, educational and commercial office sectors. In addition, it increases the lighting quality within these

facilities and adds the convenience of customer dimming capabilities, providing for not only energy savings, but peak demand savings as well.

## **8. Program Strategy**

The greatest barrier to implementation for this program is the financial risk/capital investment required to invest in new equipment. To address this issue, Energy Solve has created a no risk/no cost financing option that will be heavily promoted in the program's marketing materials.

EnergySolve will be delivering the program through a proprietary Service Agreement where the project costs are paid out of savings, similar to performance contracting. While the program is focused on the wireless, dimmable T-5 lighting, EnergySolve will also finance other energy efficiency or demand reducing measures that are cost-effective and acceptable to the customer. It is in the economic interest of EnergySolve to convince the customer to accept all cost-effective energy efficiency or energy demand reduction opportunities.

## **9. Program Objectives**

Program objectives include installation of 20,000 wireless dimmable T-5 fixtures, 5,000 T-5 highbay fixtures, 50 Nxege smart meters, and 10 GE Lighting Management systems. Total targeted savings for this program are 10,993,672 kWh and 3,794 kW.

## **10. Program Implementation**

### **Task 1: Build Tracking System**

Energy Solve will utilize the UBAR system to track by facility the data element requirements pertaining to its performance-based proposal, including all customer information and energy savings data, as well as incentives, invoices, payments, etc. This data will be available to the SCE IDEEA program management staff on the internet through EnergySolve's Utility Bill Analysis and Reporting system.

### **Task 2: Develop Marketing Materials and Obtain Approval from SCE**

The program is primarily marketed based on five key customer benefits including: reduced utility costs due to reduced energy consumption, reduced utility costs due to reduced peak energy demand, better lighting quality, convenience of customer dimming, and financing total project costs with EnergySolve Demand Response, which provides a guarantee that any customer payments will be paid for from utility payments. The key objective of all marketing materials will be to clearly communicate these points to potential customers. The channels for communication will be direct customer testimonials and referrals, telecommunication contact with potential customers, PowerPoint presentations communicating the benefits and relating brief case studies, brochures communicating the benefits and relating brief case studies, and site visits to potential customers.

### **Task 3: Implement Marketing Campaign**

The LEEDR program will focus on broader commercialization and expansion of the

technologies. Marketing efforts will focus on 1) identification of potential customers, including referrals from existing customers and 2) selling the technology and benefits to potential customers through the marketing collateral and existing customer testimonials. The marketing campaign will include building a database of potential customers based on size and business sector to be consistent with program goals, soliciting potential customers by phone and e-mail, arranging appointments with interested customers, and presenting the program to interested customers.

#### **Task 4: Enroll Customers**

Once an interested potential customer has been qualified, an audit will be conducted to ensure the customer fits the program profile. If it is a fit, Energy Solve will submit a proposal to the customer and close the transaction by securing the commitment of the customer to proceed and negotiating a Service Agreement.

#### **Task 5: Install Energy Efficient Hardware, Issue Customer Rebates, and/or Perform Program Services**

EnergySolve DR will conduct facility-by-facility, fixture-by-fixture detailed lighting audits to establish pre and post implementation fixture counts, conditions, confirm equipment and labor costs and energy savings. It will also identify demand reduction opportunities for the Nxegen and GE technologies. They will then use their subcontractors to procure the appropriate measures, and will hold a pre-construction meeting with customers and subcontractors to discuss the project. EnergySolve project managers will oversee the subcontractor installation of the project.

#### **Task 6: Inspect Installed Jobs**

At the completion of each facility, EnergySolve will do a facility walk-through to establish as-built equipment counts and to ensure all hardware is working properly. This includes identifying and counting each installed lighting fixture type, ballast and or piece of control equipment and ensuring that it is operating properly. The equipment is turned off and on several times and is then tested for dimming by running test-dimming sessions in each established dimming zone. These tests are conducted three to four times in an effort to ensure their proper operation.

#### **Task 7: Remedy Installation Issues**

After each installation, Energy Solve will work with the customer to make sure they understand how to use the technology, and will give each customer a user manual with customer service contact information. When a complaint or question does arise through the customer service telephone number, EnergySolve typically responds within four hours directly by telephone and will include the equipment manufacturer on the call if needed to provide immediate guidance, service or corrective work. They also have several trained contractors on call in the SCE area to rapidly respond to field issues if needed. EnergySolve also maintains a customer service log to track such customer calls and the service that was provided.

#### **Task 8: Perform Customer Satisfaction Surveys**

Upon project completion, customers will be surveyed to assess their satisfaction with the

services, equipment, and value provided by the program. Survey topics will range from the customer's perceived convenience of the program to customer's overall satisfaction with the implementation. Surveys will be delivered to the customer upon project completion with instructions and a postage paid addressed envelope for collection.

**Task 9: Address Customer Satisfaction Issues**

The Service Agreement between the customer and EnergySolve will provide for mediation relating to any dispute. Any dispute that cannot be resolved by mediation will be resolved by arbitration. Since EnergySolve Demand Response will own the lighting for approximately 5 years before the customer is permitted to buy the fixtures at fair market value, EnergySolve will be responsible for spot and group re-lamping and will not involve the customer in any product warranty disputes during the Service Agreement term.

For satisfaction issues without liability, discovered through either the survey feedback or other customer contact, the program will pursue continuous improvements and will track customer satisfaction issues using the customer database.

**Task 10: Perform Program Reporting**

Program workbook, flat files and project narratives will be submitted monthly and will include invoices.

**Task 11: Program Ramp Down**

In order to have a proper ramp down of the program, EnergySolve will ensure that the scheduling and implementation of all Tasks occur in a timely manner so that the program will successfully ramp down.

**Task 12: Shut Down of the Program**

The program will officially shut down December 31, 2007, but EnergySolve Demand Response will own the lighting and control equipment for approximately 5 years before the customer is permitted to buy the fixtures at fair market value. Therefore, EnergySolve will be responsible for spot and group re-lamping and overall maintenance of the system in each facility even after the close of the program. At the official end of the program in December 2007, EnergySolve will again review its ongoing obligations and requirements with SCE and the customer.

**Task 13: Follow Up with Remaining and New Customer Issues**

After program shut down, EnergySolve will maintain a customer service number for a period of 12 months. EnergySolve has negotiated a five-year warranty for any problems with the wireless, dimmable ballasts. It will also send information to all customers concerning how they can submit any warranty claims to Westinghouse following the period that the service number is maintained and make sure SCE is fully informed about the warranty claim procedures.

**Task 14: Submit Final Program Report**

EnergySolve will submit the final report containing program achievements and

challenges, goals attained, lessons learned, program improvement and program “next steps” proposed.

**11. Customer Description**

Target customers for this program include non-residential SCE customers, specifically the small commercial sector, the educational sector, and medium sized businesses including office buildings, warehouses, and industrial facilities.

**12. Customer Interface**

Customer interface will include phone marketing and e-mails sent out with program information, meetings with potential customers (including PowerPoint presentations), audits, and direct mailing of program brochures.

**13. Energy Measures and Program Activities**

**13.1. Measures Information & Energy Savings and Demand Reduction Level Data**

Measure Name	Gross Unit Annual Electricity Savings (kwh/unit)	User Entered kW Savings per unit (kW/unit)
Wireless dimmable T-5 Retrolux	424.536	0.114
Wireless dimmable T-5 Retrolux	391.305	0.114
Wireless dimmable T-5 Retrolux	284.088	0.114
Wireless dimmable T-5 Retrolux	312.246	0.114
Wireless dimmable T-5 Highbay	800.8	0.28
Wireless dimmable T-5 Highbay	940.94	0.329
Nxegen Smart Meters/ End Use control	723.84	3.48
GE Smart Meters/End Use control	0.018463422	0.01757576

**13.2 Non-energy Activities (Audits, Trainings, etc)**

Not applicable

**13.3 Subcontractor Activities**

Intergy will assist in coordinating all outreach, installation (including scheduling), and customer sign up processes for this program.

**13.4 Quality Assurance and Evaluation Activities**

As a part of the project management process, EnergySolve commits to establishing quality control through all stages of the project. They will maintain control of all project documentation, meeting minutes, status reports, correspondence, and as-built drawings.

**13.5 Marketing Activities**

Marketing activities for this program will include direct customer testimonials and referrals, telecommunication contact with potential customers via phone and email,

PowerPoint presentations communicating the benefits and relating brief case studies, brochures communicating the benefits and relating brief case studies, and site visits to potential customers.

Since Energy Solve is currently running a similar program with SCE that has laid a foundation for this program, their marketing efforts will focus more on broader commercialization and expansion of technologies that builds on current program marketing.