

EE/DR Flex Program

1. Projected Program Budget	\$	1,000,000
2. Projected Program Impacts		
MWh		2,402
MW (Summer Peak)		0.98
3. Program Cost Effectiveness		
TRC		1.67
PAC		1.75

4. Program Descriptors

Market Sector: Non-Residential, Commercial/Light Industrial

Program Classification: Local with Statewide Potential

Program Status: New Program (Contractor currently implementing a 2004-2005 IDEEA program (Cold Cathode Lighting))

5. Program Statement

This program is designed to showcase an emerging demand response (DR) dimming technology for lighting systems which reduces the overall costs for implementation. It accomplishes the objective of targeting the small to medium size marketplace where alternative technologies would not otherwise prove to be cost-effective. The system integrates a paging network and leverages high efficiency dimming electronic ballasts coupled with power line control (PLC) from the electrical panels to the fixtures.

This will allow authorized SCE personnel to execute demand response calls to the installed lighting network. A circuit control module, mounted at the head of each lighting circuit, uses the existing branch circuit power conductors to deliver control signals to downstream dimming ballasts; power reductions of up to 50% of full load can be implemented.

6. Program Rationale

EE/DR-Flex program is designed to optimize the delivery of combined lighting energy efficiency and demand response technologies to SCE's customers. A primary feature of this technology is the significant "first cost" savings due to the avoided expense of additional wiring and/or the added components for addressability. Another primary feature is transparency in delivering demand savings that are for the most part uncompromising in comparing other DR technologies. Each site is commissionable to desired lighting levels for maximum quality and efficiency, and may be dimmed via DR Pager calls to the circuit controllers.

7. Program Outcomes

The desired outcomes of the program are to conduct an innovative program which combines lighting efficiency with demand response in a cost effective manner and captures lost demand response opportunities at the time of lighting upgrade.

The EE/DR Flex Program objective is to complete the direct installations of DR dimming lighting retrofits for approximately 142 businesses. The EE/DR Flex Program will target design strategies to convert historically non-cost effective ECMs to cost-effectiveness by coupling DR to them.

Customers participating in the EEDR-Flex program will be engaged by:

- Receiving an energy efficiency lighting upgrade that is demand responsive,
- Executing a Demand Response control contract offering peak savings during critical periods,
- Receiving an optional ACRx HVAC tuneup
- Learning about additional resources and programs available to help reduce energy and usage and other demand response technologies.

8. Program Strategy

This new technology leverages existing business processes within SCE and synergizes existing aspects of energy efficiency (direct install of lighting upgrades) with added benefits of demand response (load shed capability through dimming control). This EE/DR Flex Program objective is to complete the direct installations of DR dimming lighting retrofits for approximately 142 businesses. In the course of EE/DR Flex Program, economic perspectives will be determined to further define targeted market potential and engineering perspectives will assess DR dimming strategies that may potentially serve rate assessment (cases) for EE/DR potential. The EE/DR Flex Program will target design strategies to convert historically non-cost effective ECMs to cost-effectiveness by coupling DR to them.

9. Program Objectives

ECC plans to deliver this program to customers in climate regions which benefit most from EE and DR synergies, namely the inland valley and desert regions (Climate Regions 9, 10, 13, 14, and 15). At the proposed budget of \$1,000,000, ECC will provide 985 kW in demand reduction and 2,401,919 kWh in energy savings.

10. Program Implementation

Task 1 – Re-asses Implementation Timeline, Marketing Plan, and Staffing Rates or Unit Pricing with SCE for Inclusion in the Purchase Order

The proposed timeline allows for the first quarter of 2006 to be dedicated to developing outreach and marketing materials, targets and strategies. ECC will roll out actual installations for customers to be recruited during the latter part of Q1 2006.

Deliverables: Revised E3 Calculator, Marketing Materials, Revised Staffing Budget

Due Date: 10 Working Days from Contractor Selection/Negotiations Finalized

Task 2 – Assemble and Submit SCE Approved Purchase Order Kit

ECC will begin the collaborative targeting procedure upon receipt of the Purchase Order. Any program flow revisions that SCE requires shall be implemented in an expeditious manner within 10 days of Purchase Order Award.

Deliverables: Final Purchase Order Kit Submittal

Due Date: 10 Working Days from Contract Award/Negotiations Finalized

Task 3 – Build Tracking System

ECC has a special license to utilize EnerPath's program tracking website for the delivery of utility programs. A Summary Report will highlight information on installed projects and committed projects. A flat file (ASCII CSV) that supports the reporting shows all data elements in a customer record will be used to record customer contacts and any customer activities including installations, and rebating. The flat file records, for a given project, will be updated on a regular basis so that the progression from a sales contact to an installation to an inspect project are fully documented.

Deliverables: Detailed Tracking System Overview with Program Manager, Flat File, other reporting documents.

Due Date: 25 Days from Purchase Order Execution

Task 4 – Develop Marketing Materials and Obtain Approval from SCE

ECC will submit marketing materials for SCE review within 2 weeks of Purchase Order Receipt. The pieces will include information on the program which details incentives and approved hardware for the program. At minimum the brochures will contain marketing information on demand responsive dimmable lighting and the energy efficiency tune-up measures included in the base program.

Deliverables: Program Description, Program Signup Form, DR Commitment Form

Due Date: 20 Days from Purchase Order Execution

Task 5 – Implement Marketing Campaign

A direct email will be sent to the potential program participants after targeting has taken place for those customers with an email account of record within SCE customer information. The primary roll of marketing for the program will be a direct sales force equipped with PDAs and wireless printing devices enabled to produce all the reports for enrolling customers with work authorizations etc. right in the field

Deliverables: Program Introduction Email Form, Program Direct Sales Powerpoint

Due Date: 20 Days from Purchase Order Execution

Task 6 – Enroll Customers

ECC Energy Service Representatives (ESRs) will direct market and sign-up prospects by directly visiting their facilities. If the customer has any additional program questions, technical support staff will be available during business hours via a telephone support call. For larger clients necessitating a multi-step sales support effort, our ESRs will have the depth of ECC's professional lighting and demand management staff upon which to draw to support these efforts. It is estimated that approximately 6 to 7 customers per month will be enrolled in the program. A list of other programs which may be suitable for the customer will be part of the program reports delivered to the customer for ECMs not covered by this program's scope. In addition, a special cross-marketing effort to garner customer interest in other Demand Response programs will be

made. ECC intends to track percentage uptake rates to other DR programs as a result of our direct sales and marketing efforts.

Deliverables: Other Available Programs List

Due Date: 20 Days from Purchase Order Receipt

Task 7 – Install Energy Efficient Hardware, Issue Customer Rebates, and/or Perform Program Services

ECC intends to create a hybrid Direct Install program with a hurdle above which the customer is asked to participate financially. The hurdle will be a co-pay amount which is only assessed if both the cumulative Demand Response Incentive and the Energy Efficiency Direct Install funds are not sufficient to cover the costs of the entire system upgrade. It is ECC's goal to jump start the program with 100% funding for early adopters in the first year, ratcheting back to a blended average of \$0.24/kWh saved and \$250/kW/yr demand controlled per aggregate program period (cumulative for term of signup offsets material costs).

Deliverables: Revised Program Workflow Diagrams and Text

Due Date: 10 Days from Contractor Selection/Negotiations Finalized

Task 8 – Inspect Installed Jobs

ECC will have trained field verification agents inspect 100% of the projects' lighting upgrade measures.

Deliverables: Verification of Installation Report, ESR questions, 10% Extra Flex Incentive

Due Date: 20 Days from Purchase Order Execution

Task 9 – Remedy Installation Issues

The verification/inspection agent will be capable of directing and affecting any remedies with respect to installation issues. Each trade will be responsible for obtaining final completion sign-off from the customer, however, the VIA will be enabled to direct any final adjustments necessary for total customer satisfaction.

Deliverables

- Verification of Installation Report Form – 5 Days after Contract Signature
- Punch-list Items / Issue Notification Report – 5 Days after Contract Signature

Due Date: Within 72 hours of Issue Notification Report

Task 10 – Perform Customer Satisfaction Surveys

ECC uses EnerPath's customer satisfaction tools to insure customer satisfaction surveys are completed and recorded electronically. These surveys will not only gauge satisfaction but also interest and awareness of the idea of Flexing your Power through the use of Demand Responsive technologies that are integrated in at the time of retrofit / tune up.

Deliverables: Online Customer Satisfaction Template

Due Date: 25 Days from Purchase Order Execution

Task 11 – Address Customer Satisfaction Issues

Any installation or other problems discovered during the verification process will be entered into the web-based project log and dealt with, if possible by the Site Verification Agent. Subcontractors will be brought back to fix any problems found. Larger problems will be brought to the attention of the ECC Program Manager. Problems ultimately rectified and verified will be log. The SCE program manager will regularly be advised of additional entries into the project log.

The Customer Satisfaction Interview

Using the tools (questionnaire) provided by SCE, the customer satisfaction interviews will be registered on the web and viewable by SCE. The Verification Agent will perform the interview on site during inspection at the customer's place of business. In the event that a business owner or manager is not present, attempts will be made to conduct the interview by phone.

Deliverables: Online QV Issue Log Review

Due Date: Any revisions to that which is available now, due 25 days from Purchase Order Execution

Task 12 – Invoice SCE for Completed Jobs

Deliverables: Walkthrough of Invoice and Installation Activity Portal with SCE PM

Due Date: Any revisions to that which is available now due 25 days from Purchase Order Execution

Task 13 – Perform Program Reporting

ECC plans to utilize EnerPath tools and website to produce downloadable reports available on a daily basis. Invoices shall include the workbook, budget expenditures and requisite flat files from the EnerPath system. Ad hoc reporting via various reports and data viewports will be made available to program administrative staff via the web so that management may have immediate access to information.

Deliverables: a) Final Program Workbook b) Sample Program Narrative c) Sample Flat File d) Develop Ad Hoc Reporting format, Walkthrough of Program Tracking, Invoice and Installation Activity, and Program Reporting Portal with SCE PM

Due Date: Any revisions to that which is available now due 25 days from Purchase Order Execution

Task 14 – Program Ramp Down

ECC plans to ramp the program down over the 4th quarter of 2007 so that all clients may be served and satisfied before the program ends. ECC proposes to send a notification of program ramp down and close out to all prospective customers who have not subscribed to the program as a method of building awareness of project termination horizon, and build a final pulse of project interest. Ramp-down activities are scheduled from Mid November to Mid December 2007 so that all program reporting and documentation may be delivered in advance of the holidays.

Deliverables: Online Performance Tracking in Real Time

Due Date: Available now via EnerPath Tools

Task 15 – Shut Down the Program

Each project's final completion sign-off will serve as the trigger for warrantee period tracking and each client will have a warrantee horizon date assigned as the project completion documentation is cataloged. In the final weeks of the program there will be no additional sales efforts and the focus will turn to finalizing the program reporting and installations. The program will terminate, but all clients serviced in the past year will remain under warrantee until their term, started when Construction Completion Sign-off is signed by the customer, ends.

Deliverables: Program Wrap Up Notification

Due Date: July 2007

Task 16 – Respond to Miscellaneous

It is ECC's intent to work closely with SCE administration staff to insure that any program reporting requirements are met.

Deliverables: Online Reporting of Program Success

Due Date: Available throughout the term of the purchase order performance period.

Task 17 – Follow Up with Remaining and New Customer Issues

A project closeout workbook will be developed with cut-sheets (specifications) and warrantees for new equipment installed during the course of the program. ECC will maintain a copy for its warrantee period and will inform clients of manufacturer material warrantees as a function of the customer closeout package. Additional hardware warrantees will be determined and posted in the project material specifications workbook submitted to SCE at project closeout. Every customer will receive a completion package upon signed certificate of completion containing ECC and manufacturer contact information along with warrantees.

Deliverable: Customer Warrantees

Due Date: 20 Days from Purchase Order Receipt

Task 18 – Submit Final Program Report

The final document that will be submitted at the conclusion of the program shall be the final program report.

Deliverables: Program Success Matrix, Program Experience Discussions, Program/Product Vision Report

Due Date: December 2007

11. Customer Description

The program will target small to medium commercial, retail and light industrial accounts with an emphasis upon 277 Volt lighting systems as they are generally more cost effective to control with this technology.

12. Customer Interface: Please see Task 6 (Above)

13. Energy Measures and Program Activities:

13.1. Measures Information: Please see 13.2 (Below)

13.2. Energy Savings and Demand Reduction Level Data:

Measure Name	Gross Unit Annual Electricity Savings (kwh/unit)	User Entered kW Savings per unit (kW/unit)
4ft 2L T12 to F32T8 with DR Elect Ballast	84.105	0.02592
Pager Responder & DR Circuit Controllers	45.9	0.918
8ft 2L T12 to 2L F32T8 with HBF DR Dimming Elec Ballast	180	0.054
4ft 3L T12 to 4ft 2L F32T8 with DR Dimming Ballast WPC Refl	223.2	0.062
4ft 4L T12 to 4ft 2L F32T8 with DR Dimming Ballast WPC Refl	302.4	0.084
(2) 4ft 2L T12 to (2) 2L F32T8 with DR Elect Ballast per fixture (Double DEER est)	168.21	0.05184
251-400WHID to HBF DR T8 Fluorescent Hibay	709	0.197
ACRx HVAC Tuneup	966.3	0.71932
Commission 10% dimming for customer for \$100	1652.4	0.459
Screw-in Compact Fluorescent Lamp, 5-13 Watts	102.68	0.026012
Screw-in Compact Fluorescent Lamp, 14-26 Watts	209.162	0.052988
Screw-in Compact Fluorescent Lamp, >27 Watts	273.812	0.069367
LED Exit Sign	351.31104	0.04248
8ft 1L HOES T12 to 2L F32T8 with HBF DR Dimming Elec Ballast	144	0.04

13.3. Non-energy Activities (Audits, Trainings, etc.): Please see Task 4 and 5 (Above)

13.4. Subcontractor Activities

Subcontractor activities for the program are listed below for all survey components:

Lighting:

ECC will leverage its network of prequalified lighting and electrical labor contractors to insure the upgrades are completed in a manner which insures high quality. ECC will integrate the commissioning process with the final inspection to insure customers are satisfied with the program delivery.

HVAC ACRx:

ECC will utilize its HVAC contractors who are trained in the use of the ACRx tool to complete the HVAC tune-ups.

All Subcontractors will have direct report to Energy Controls and Concepts who will handle all aspects of program management, subcontractors role in this program will be to provide high quality, timely and cost effective installation and maintenance services.

<i>Duties</i>	<i>Firm</i>	<i>Lic Type</i>	<i>Lic Verified</i>	<i>Insur Cert</i>
Prime Contractor	Energy Controls & Concepts	B / C-10	X	X
Lighting Contractor	Retro-tek Energy Services	C-10	X	
Lighting Contractor	Apollo Lighting and Electrical	C-10	X	
Lighting Contractor	Celco Construction	C-10	X	
Lighting Contractor	ACM Lighting	C-10	X	
Auditing Contractor	Optimum Electric	N/A	N/A	
Auditing Contractor	Power Systems Technology	N/A	N/A	
Mechanical Contractor	Linc Mechanical	C-20	X	

13.5. Quality Assurance and Evaluation Activities: Please see Task 8 & 9 (Above)

13.6. Marketing Activities: Please see Task 4 & 5 (Above)