

**PGE2069 Combined Approach to Solar & Efficiency (CASE)—PowerLight**

2006 - 2008

1. Projected Budget*	\$2,367,043
2. Projected Net Impacts	
MWh	9,839
MW (Summer Peak)	3.398
Therms	-(122)
3. Cost Effectiveness*	
TRC	1.21
PAC	3.59

\*Does not include PG&E contract administration costs, which are estimated at 5 percent of expected contract value and included at the portfolio level.

4. Program Descriptors

Market Sector: Agricultural & Food Processing; Heavy Industrial  
Classification: Third Party  
Status: New

PowerLight's CASE program will offer audit and design services, financial incentives and project management of energy efficiency measures within target market segments. The program participants will be drawn from PowerLight's existing and prospective photovoltaic (PV) system clients.

The program will target the agriculture/food processing and industrial market segments (specifically the water and waste water treatment sub-segment). PowerLight is well positioned and has a very successful track-record within these market segments. Additionally, by focusing on these segments, PowerLight is addressing two of PG&E's portfolio gap areas.

PowerLight will manage and monitor the execution of all projects from start to finish. A large proportion of this program's funding is allocated directly toward the costs of implementation to maximize the economic proposition to the customers. By offering additional DSM incentives to customers in combination with their PV systems, PowerLight will be able to achieve the following objectives:

- Size the PV system according to a more efficient building
- Capture energy efficiency opportunities often overlooked in the implementation of PV projects (lost opportunities)
  - Offer the implementation of these measures at a more competitive cost proposition.

- Meet or exceed CPUC requirements to encourage customers to review energy efficiency at the time of PV/CSI program participation

PowerLight will utilize engineering and energy audit partners, sub-contractors and other utility program resources include water agency funding if applicable.

PowerLight expects that energy savings from C.A.S.E. will be delivered as early as Q3, 2006, and will ramp up and continue throughout the duration of the program. A chart showing benchmarks is included under item 10.

## **5. Statement**

Challenge: The customers within the target segments are not unique in that they are often constrained by their capital budget and lack of available resources to adequately investigate energy efficiency opportunities.

Challenge: Many customers are simply unaware of the various incentives and educational resources that are available to them. Some are unaware that they directly fund DSM programs through a public goods surcharge on their utility bill. As a result, facility owners and operators are not displaying the level of demand for such goods and services that are being supplied to them.

Challenge: There also seems to be an overriding lack of information in this market with respect to emerging technologies and advancements in efficient building operation. Even the most savvy of customers are aware of the opportunities available to them on only a cursory level. Much of this has to do with a general reluctance to “fix something that isn’t broken”, and unfortunately this type of soft-resistance is leading to inaction on their part. For others, they are simply not up-to-date with current technology. They may have installed a system 10 years ago, which was efficient at the time, but which has since been greatly surpassed. For others still, there exists the sentiment that energy efficiency requires sacrifice on the part of facility operators and inhabitants, when in fact, the exact contrary is usually true.

Challenge: Commercial and institutional customers often focus on their core business or competencies, leaving few resources available to bid, evaluate and coordinate energy projects.

## **6. Rationale**

PowerLight’s proposed program addresses the above stated challenges on multiple levels. First, and perhaps most importantly, the targeted customers have a responsible and forward-looking outlook with respect to energy. These customers understand the value of energy, and the role they can play to create a sustainable energy strategy for their businesses. PowerLight will address the gap in customer education/program awareness through a marketing and direct sales approach combined with PowerLight’s PV offering. Amidst the wake of investing in a large-scale, renewable energy project, customers tend to develop an elevated sense of ownership and

pride in their facility as well as their business model. They see themselves as pioneers and feel an extra sense of responsibility and urgency to view their operations and facility from a holistic perspective. In this sense, these customers are already primed with the ideal mindset to implement a comprehensive energy strategy, which is an advantage that other programs do not necessarily have. They are also already involved with the Self Generation Incentive Program of PG&E, and so are more familiar and comfortable with how these utility programs operate and what they have to offer. These factors pave a clear path for the introduction of energy efficient measures to smartly supplement their newly purchased onsite PV system.

The fact that customers have decided to purchase a PV system means that they have already taken a substantial leap and are investing time and energy to consider a large-scale energy project. The CASE program financial incentives seek to overcome the challenge related to access to capital or cash flow.

The initial stages of the program will serve to educate customers on current technologies that have been handpicked as offering the greatest opportunities for savings based on our audit. The detailed energy survey and feasibility report will help customers understand that technology options are vastly improved over the past 10 or more years.

One of the advantages to the customer of pursuing such a project with PowerLight will be a single point of contact and accountability for the project, which should ease reluctance to get involved in “too much” at once. The customers will not be burdened with multiple project managers and funding sources, as PowerLight will leverage the PV project to bundle the energy efficiency portion into a single project. Moreover, by offering customers a captive incentive that is bundled with their PV investment, they will be more likely to pursue the project based on the advantage of not having to deal with multiple bids, proposals, budget allocations, etc. This will be especially relevant to the water and waste-water treatment segment, which will benefit greatly from reducing the contracting burden.

Lastly, PowerLight has chosen the agriculture/food processing and water treatment segments because of our superior reputation within these industries. PowerLight is one of only two solar vendors on ACWA’s (Association of California Water Agencies) Preferred Provider Program for California’s 450 water districts, as well as being a member of AWWA (American Water Works Association). In addition, PowerLight has installed more solar systems on wineries in California than any other provider and is a member of the Wine Institute, the industry’s leading trade group.

## **7. Outcomes**

The overall objective of the CASE program is to offer targeted customers a cost-effective way to reduce their electrical demand by strategically combining solar and energy efficiency technologies. By offering customers a technically and financially feasible DSM solution, they will reap both energy and non-energy benefits.

Non-energy benefits may include –

- Improved comfort of facility inhabitants

- Replacement of equipment due to be retired
- Contributing to advancement of energy efficiency products and services
- Education of building operators of smart energy management practices
- Promotion of a diverse energy strategy
- Positive environmental impacts

The energy savings, as detailed in Section 2, benefit customers as well as contributing towards PG&E's portfolio goals.

In addition to the immediate benefits to our customer base and PG&E's energy efficiency portfolio, the model of the CASE program is well aligned with the overall objectives and direction of the CPUC's newly released California Solar Initiative (CSI) program. The initiative makes paramount the inclusion of energy efficiency when considering an investment in solar power. We believe that the CASE program can serve as a model to showcase the successful integration of these two separate but complementary energy solutions.

## **8. Strategy**

PowerLight's CASE program model will follow the cutting edge thinking of the integrated energy model. The foundation of the model is an initial audit and feasibility study that is provided to the customers. After completing the survey of the site, PowerLight will work with its staff of engineers and local consultants to put together a list of recommended measures. From this list of recommendations, PowerLight will put together an easily comprehensible report that summarizes the various conservation and energy efficiency measures proposed along with their expected costs and calculated savings. After these baseline steps are taken, generation opportunities will be evaluated.

Once the feasibility report has been completed, PowerLight will present the findings to the decision makers both financial and technical. Along with a description of the technologies being proposed and their energy saving virtues, our presentation will include options for implementation, associated financial returns, and expected additional benefits to the staff operating the new equipment. With this initial objective of simply educating customers to the opportunities available and how these measures can be implemented in an efficient and cost-effective way, the program offers a no obligation and no risk proposition to the customer.

A critical part of the audit report to the customer will be an explanation of the incentives that will be made available to them to implement the measures that are being recommended, thereby maximizing the ease and attractiveness of going forward with the extended project. The majority of customers should find the opportunity to complement their PV system with a cost-effective energy efficiency project attractive.

## **9. Objectives**

The key milestones of our program are facilities audited, projects implemented and savings garnered. The figures provided below represent a realistic range, based on the number of eligible clients and the size of the projects being considered. For example, PowerLight may perform a few large, comprehensive projects versus a higher volume of small-scale projects. Final determination will be made upon evaluating the quantity and cost-effectiveness of opportunities uncovered at each site.

	Quantity		
	2006	2007	2008
Facilities Audited	10-20	20-40	40-75
Projects Implemented	3-5	8-12	15-24

## **10. Implementation**

The objective of the CASE program is to further promote and implement efficiency projects in conjunction with PowerLight’s PV installations. The funds made available through the program will be used to carry out the following activities:

- **Energy Audits** – Comprehensive energy audits shall be conducted for prospective clients as well as select existing customers. Audits shall focus on electricity consumption by lighting and mechanical systems, and energy management systems where applicable. Information collected may include current and historical utility data, as-built drawings, data logging results, and interviews with facility operation staff.
- **Feasibility Reports** - Feasibility reports shall be created for each inspected site, including estimates of energy savings and descriptions of proposed measures. Findings shall be presented to customers, including a summary of measures, cost and savings estimates, and incentives available through the program.
- **Implementation of Measures** - PowerLight will offer customers a range of options to implement the desired measures. PowerLight may act as prime contractor or may simply act as an engineering consultant, leaving the project implementation up to the customer. In either case, PowerLight will oversee the design and installation of the work to ensure that each project meets its objectives and savings goals. Incentives will be made available to customers through the program to offset the cost of implementation. Payment levels will be based on stipulated energy savings.

## **11. Customer Description**

The CASE program will target PowerLight’s customers of PV systems within two primary sectors - agriculture/food processing and industrial (specifically the water and waste water treatment sub-segment). Customers will be selected based on the anticipated quantity and value

of energy savings opportunities and must be concurrently pursuing the purchase of (or have already purchased) a PV system from PowerLight.

## **12. Customer Interface**

The CASE program will be presented to customers through a combination of marketing efforts and PowerLight's existing direct-sales process. Participation in the program will be offered in conjunction with a PV system offer as an opportunity to increase savings to the project and to take advantage of our targeted program's unique offer. In order to participate, customers will fill out an application form, which will serve both as an agreement with all necessary legal conditions to ensure consistency with any PG&E requirements, as well as an application for eligible incentives for proposed measures. In this form, the customer will have the choice of requesting payment of incentives, or alternatively assigning the incentive payment to a designated party.

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

### 13.1 Prescriptive measures.

All data used in determining savings estimates in this bid were based on the DEER data available as of 10/16/2005. For consistency and clarity, DEER was used to represent an estimate of the anticipated overall project savings based on a mix of potential measure installations. The measures included can be seen in the following table.

#### **List of Prescriptive Measures\***

Measure Name	DEER RunID
Premium T8 EI Ballast	CMLI00AVT8E01
50W Metal Halide	CMLI00AVMTH01
100W Metal Halide	CMLI00AVMTH03
Occ-Sensor - Wall box	CALC00AVOCC01
LED Exit Sign Retrofit Kit	CALC00AVETS02
De-lamp from 4', 4 lamp/fixture	CMLI00AVDEL01
Photocell	CALC00AVPHOTO
Premium Efficiency Motor - 10 HP	COTI00AVMOT13
Premium Efficiency Motor - 15 HP	COTI00AVMOT14
Premium Efficiency Motor - 20 HP	COTI00AVMOT15
Premium Efficiency Motor - 25 HP	COTI00AVMOT16
Premium Efficiency Motor - 50 HP	COTI00AVMOT17
Premium Efficiency Motor - 100 HP	COTI00AVMOT18
Premium Efficiency Motor - 150 HP	COTI00AVMOT19
Premium Efficiency Motor - 20 HP	COTI00AVMOT05
Premium Efficiency Motor - 25 HP	COTI00AVMOT06
Premium Efficiency Motor - 50 HP	COTI00AVMOT07
Premium Efficiency Motor - 100 HP	COTI00AVMOT08
Premium Efficiency Motor - 150 HP	COTI00AVMOT09
Premium Efficiency Motor - 200 HP	COTI00AVMOT10
VSD Centrifugal Chillers	COFL0185ChIV1
H.E. Evap/Water-Cooled Pkg A/C <65k	CMLI1385EWCAS
H.E. Evap/Water-Cooled Pkg A/C >=65k	CMLI1385EWCAL
Efficient HVAC Motors - Supply Fans	COFL1385EMSFn
Efficient HVAC Motors - Return Fans	COFL1385EMRFn
Efficient HVAC Motors - Cig Tower Fans	COFL1385EMCTF
Efficient Motors - Chilled Water Loop Pumps	COFL1385EMCLP
Efficient Motors - Hot Water Loop Pumps	COFL1385EMHLP
Suite of EMS Measures	CECC1385HCEMS
Retro Commisioning	CWRf1385WRtro

\* Should other prescriptive measures be identified at a particular site, PowerLight will select the appropriate measure from the DEER database and submit this to PG&E for approval prior to implementation.

13.2 kWh Level Data.

None of the measures included in the cost-effectiveness calculator relied on custom savings calculations. Should measures be identified at a particular site that are not

captured in the DEER database, PowerLight will submit calculated energy savings to PG&E for review and approval prior to implementation.

13.3 Non-energy Activities – This section is not applicable to our program.

13.3.1 End-use Load (if applicable) – N/A

13.3.2 Targeted Sector – N/A

13.3.3 Activity Description – N/A

13.3.4 Quantitative Activity Goals – N/A

13.3.5 Assigned Attributes of the Activity – N/A

13.4 Subcontractor Activities

Activities that may be performed by subcontractors include:

- Design / Engineering Services
- Installation of Measures
- Retro-Commissioning Activities

13.5 Quality Assurance and Evaluation Activities

Quality assurance for CASE will be carried out for all elements of program service per the following procedures and specifications.

**Procurement Procedure** –PowerLight will follow its procurement procedure in implementing the program, including but not limited to procuring materials and services via competitive bids, with cost and company track-record as the primary factors considered for selection, and establishing business relations with trusted suppliers and contractors to provide quality products and services.

**Delivery Procedure** – PowerLight is responsible for delivery of all products and services related to the program in a timely and reliable manner. PowerLight will require contractors and vendors to provide lead-times for all purchases, and will enforce penalties for failures to meet such standards or deadlines to promote timely installation and end-customer satisfaction.

**Installation Procedure** – PowerLight’s installation activities will be performed by qualified subcontractors that have displayed proficiency in implementing similar projects. PowerLight will only contract with companies with sufficient financial backing, insurance coverage, and relevant degrees and licenses based on the work being performed.

**Equipment Specifications** – Proposed equipment and technologies shall comply with those requirements set forth in PG&E’s current energy efficiency programs with respect to both installation and minimum efficiency requirements.

PG&E may utilize a variety of methods to verify the installation and operation of equipment, including but not limited to post installation site inspections and product invoices.

Measure Verification –Each site will be inspected following implementation of measures to ensure proper installation and operation, and to verify consistency with the reported energy savings calculations. Additionally, no incentive payments shall be made before a site inspection has been conducted and measures verified. PowerLight shall comply with any specific EM&V requirements as mandated by PG&E and/or the CPUC.

### 13.6 Marketing Activities

#### Overview

In an effort to drive adoption and implementation of energy efficiency alongside our customers' self-generation energy goals, PowerLight is committed to an integrated marketing strategy that will both promote and educate potential candidates on the advantages of this combined offering.

#### Marketing Objectives

- Build awareness and education around the benefits of combining solar & energy efficiency
- Build recognition around all-in-one packaging of PV + EE; showcasing how this advantage can significantly help reduce costs and speed time of project deployment
- Capture new energy efficiency opportunities often overlooked during the implementation of PV projects
- Continue to create demand through segment-focused marketing initiatives that target 1) agriculture/food processing, and 2) water & waste water treatment, as PowerLight is already well positioned within these industries

#### Education Goals

The program's educational goals include helping customers to understand:

- How to maximize the value of customers' solar investment by adopting a more comprehensive energy solution that includes energy efficiency
- Today's latest advancements and emerging technologies that support efficient building operation
- New state & federal incentives and educational resources behind energy efficiency
- How CASE program funding will be used to offset the cost of implementing energy efficiency features at customers' sites

Marketing Activities to include:

**Product Marketing  
Advertising**

- Print advertising in CA local/regional newspapers and publications
- Online: updated pay per click campaign for PV + EE geo-targeted to CA

**Public Relations**

- Secure press coverage by identifying appropriate media contacts and articulating unique value proposition of PV + EE offering, above and beyond generic solar-driven PR
- Implement dedications/events for completed projects to promote and leverage local and regional publicity

**Website & Online Marketing**

- New content for PV + EE at: [www.powerlight.com](http://www.powerlight.com)
- Updated search engine optimization (SEO) campaign with advanced keyword targeting

**Print Collateral**

- PowerLight Overview PV + EE Brochure
- Case Studies

**Sales Development Tools**

- Corporate PowerPoint presentation
- Sales proposal templates & content

**Vertical Market Segment - Lead Generation  
(For Agriculture/Food Processing & Water & Waste Water Treatment)**

**Advertising**

- Print advertising in local, vertical publications
- Web driven database of vertical market segment leads & contacts
- Targeted direct mail and email campaigns

**Web Marketing**

- Vertical SEO & PPC campaigns

**Tradeshows & Events**

- Potential speaking opportunities & panel presentations
- Sponsorships

- Tradeshow Exhibit booth presence
- Increased presence and support with key partner organizations such as:  
California Wine Institute, ACWA, AWWA

**Collateral**

- New Agriculture/Food Processing PV + EE Brochure
- Water PV + EE Brochure

**14. Conclusion**

As the leading provider of large-scale PV systems in the U.S., PowerLight has access to a large and ever increasing number of clients with ambitious goals to reduce their energy demand. By implementing the CASE program, PowerLight will provide an innovative and yet bulletproof procurement of considerable system benefits over the next three years.