

PGE2051 RightLights—Ecology Action

2006 - 2008

1. Projected Budget*	\$10,247,466
2. Projected Net Impacts	
MWh	34,409
MW (Summer Peak)	5.44
Therms	442,200
3. Cost Effectiveness*	
TRC	1.11
PAC	1.46

*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. Descriptors

Market Sector: Nonresidential
Classification: Existing Third Party
Status: Extension

RightLights is a multilingual direct install program implemented by Ecology Action that delivers comprehensive lighting retrofits to small businesses in Santa Cruz, Monterey, San Benito, Santa Clara, and San Mateo counties. For one measure – pre-rinse spray valves – our service area includes nearly all counties in PG&E territory. In 2006-08 Ecology Action proposes additional measures in order to leverage the RightLights marketing and operational platform. The RightLights measure list now includes:

- Lighting
- Pre-rinse spray valves
- Refrigeration tune-ups
- Refrigeration fan motor drop-in replacements
- Refrigeration heater door controls
- Strip curtains
- Refrigerator door gasket replacements
- Interactive refrigeration controls (allows for continuous commissioning and can be linked for demand response)
- Vending machine controls

RightLights serves retail, light industrial, food service, light manufacturing, office buildings, lodging, schools, municipalities and nonprofits, and common areas of multifamily complexes.

Ecology Action will continue to collaborate with local entities such as Chambers of Commerce, merchant associations and other for-profit and nonprofit firms in order to minimize marketing costs and maximize cost effective energy savings.

All installations will be completed before the end of 2008. A substantial component of the program's energy efficiency measures will yield savings that will persist for 11 years or more.

5. Statement

Unmet Need Persists

Traditionally, PGC-funded energy efficiency programs have had difficulty reaching significant numbers of very small and small nonresidential customers. Likewise, it has proven difficult to serve this market comprehensively. For example, RightLights finds that only about one out of 15 businesses we approach has completed a comprehensive lighting retrofit in the previous five-year period. This underscores both the enormous potential for energy savings in the small business market as well as the need to provide convenient, turn-key solutions for these customers. Despite the fact that RightLights will have served a projected 3,300 businesses by end of 2005, we will have reached less than 6 percent of the estimated market in the program area¹.

Market Barriers

A RightLights participant survey found that 88 percent of respondents had not taken part in other energy efficiency programs. According to Quantec's "Interim Evaluation of the 2004 RightLights Program,"

"The Program is successfully reaching businesses that were not likely to install energy efficient lighting on their own. The majority of the respondents (92 percent) reported that, in absence of the RightLights Program, they were very unlikely to have installed the same high efficiency lighting in the next year. Those that would have installed lights most likely would have done a far less comprehensive retrofit, generally installing compact fluorescent bulbs in their business. This confirms the Program theory that small commercial customers are not likely to install comprehensive energy-efficient lighting measures on their own and that the Program is fulfilling an important niche opportunity."

Despite spending a higher percentage of operating costs on energy compared to larger businesses, small enterprises continue to present a number of obstacles to successful energy efficiency program implementation. Key market barriers include:

- **Technology information search costs:** Small businesses lack the time and expertise to evaluate efficiency opportunities.
- **Financing information search costs:** Upgrade costs are immediate while savings occur over time. Initially, cash flow can be negative and research of optimum rebate or loan programs can be time-consuming.

¹ Customers that would participate under current market conditions with current incentive levels.

- **Performance uncertainties:** Small businesses can be unsure about appropriate energy efficiency technologies as well as the skills, honesty and motive of unfamiliar contractors.
- **Transaction costs:** Small firms often do not have the time or financial resources to develop and implement new projects.
- **Split incentives:** Tenants are reluctant to invest in a landlord's property, and owners may not want to invest in energy efficiency when the tenant pays the utility bills.
- **Lack of viable service providers:** Installation and program overhead costs reduce overall program cost-effectiveness, which in turn limits the number of firms that choose to propose and implement PGC programs that could meet small business needs.
- **Controllability:** Business owners view energy costs as fixed rather than as expenses they can control.

Coordination with Similar programs.

There are several programs that have presented potential overlap challenges. In each case, coordination has already occurred and will continue with specific focus on minimizing customer confusion and maximizing portfolio cost effectiveness.

Since RightLights' inception in 2002, Ecology Action has coordinated with PG&E's Express Efficiency and Standard Performance Contract Programs by referring potential customers to them who do not qualify for RightLights because of size or geography.

Ecology Action has been in coordination with California Urban Water Conservation Council since 2004 on their Rinse & Save program, and began coordination for our respective 2006-08 pre rinse spray valve programs in May of 2005.

PG&E, Ecology Action and the Association of Monterey Bay Area Governments (AMBAG) are in communication regarding RightLights and the PG&E / AMBAG Energy Watch Partnership. Ecology Action sits on the AMBAG Energy Advisory Committee, which has facilitated frequent communication among the two agencies.

Ecology Action, PG&E and the City of San Jose have been in communication on the 2004-05 implementation of RightLights as it relates to the Silicon Valley Energy Partnership. These efforts will continue into 2006 and beyond.

Ecology Action and PG&E understand that coordination is a very high priority in 2006-08 and we will continue this effort throughout the contract period.

6. Rationale

Each programmatic element of RightLights specifically addresses the market barriers described above as follows:

- **Technology information search costs:** RightLights provides the decision maker with site-specific, filtered and relevant information, as well as the required expertise to analyze the available options.
- **Financing information search costs:** Aggressive rebates mean that first costs are minimized and payback periods as short as possible.
- **Performance uncertainties:** RightLights' success is based on the ability of the retrofit to meet the financial and performance needs of the small business owner. Knowing that we have vetted program contractors, the decision maker is confident that the job will be done correctly and in the best interest of the customer.
- **Transaction costs:** With RightLights' help and very few decision points, the business owner can initiate the process and trust that the contracted work will not interfere with the core business of the firm.
- **Split incentives:** Because first costs and hassles are limited or eliminated, tenants are able to justify adoption of the energy savings measures without negative financial impact.
- **Lack of viable service providers:** RightLights screens participating contractors, maintains high standards, and verifies quality. By aggregating multiple small jobs we are able to focus contractors' attention on the customer class that could otherwise receive lower prioritization in their busy work flow.
- **Controllability:** RightLights uses a simple savings report format and supplementary materials to educate customers about how they can control energy costs easily and with confidence.

Why is this program being advanced instead of other program approaches?

Ecology Action is advancing the RightLights program model because of its cost effectiveness, ability to penetrate the small commercial market, and ability to minimize lost opportunity.

Ecology Action designed RightLights to respond very specifically to the barriers faced by the small business customer. The unique elements of our direct install delivery approach maximize the owner's decision-making confidence and minimize the time, money, and effort required to install long-term energy savings. This allows us to reach the small commercial market more cost effectively while delivering more comprehensive retrofits than other program approaches.

This is underscored by results from Quantec's "Interim Evaluation of the 2004 RightLights Program" which noted that only ~28 percent of RightLights savings is derived from CFLs. The remaining ~72 percent results from T8/EBs, LED exit signs and other measures. RightLights' CFL savings component is low compared to prescriptive and contractor-specified direct install lighting programs, which demonstrates greater comprehensiveness than those approaches have delivered. RightLights' program-wide use of "Super T8" retrofits often adds an additional 15 percent energy savings vs. standard retrofits and undoubtedly contributes to this exceptional comprehensiveness and cost effectiveness performance.

RightLights Minimizes Lost Opportunity

In the small commercial market, there is a fine balance between attempting to capture as much savings as possible and losing ALL opportunity by proposing a retrofit that is too capital-intensive or too overwhelming for the decision maker to accept. Despite this ongoing challenge, from 2002 through 2005 RightLights has excelled at maximizing comprehensiveness within all lighting end uses and we plan to extend this success in 2006-08 to other end use measures.

RightLights program features minimize lost opportunity by enhancing the owner's ability to say "yes" to a more aggressive savings proposal. These features include maximizing ease of participation, turn-key installation, aggressive incentives, highly skilled technical sales staff, best-available technology, tight control of installers, close customer communication and advanced system design strategies that employ the highest efficiency equipment while requiring less of it. In short, we apply a practical systems approach that yields comprehensive results and satisfied customers.

Many lighting retrofits in the small commercial segment are specified and installed by general contractors who are not lighting experts and are responding to a customer's request to "do something to improve my lights." A typical approach is to install minimally code-compliant (i.e., 1st generation) equipment that leaves potential savings unrealized. In addition, many general contractors may be only minimally familiar with the breadth of current CFL products and commercial application strategies for CFLs. While the result is better than no retrofit, this nonetheless compromises comprehensiveness and represents a lost opportunity.

Finally, the biggest missed opportunity is a potential customer who decides not to participate. RightLights maximizes participation because customers appreciate that our Auditors/Specifiers have very clear motives and are concerned solely with delivering utility savings and high quality lighting to their place of business.

RightLights in 2006-08 features one measure that can enable demand response: interactive refrigeration controls. The presence of this equipment enables customers to enroll in utility demand response incentive programs at their option.

7. Outcome

The primary purpose of the program is to deliver comprehensive retrofits and efficiency measures that yield persistent and verifiable short- and long-term energy savings at the lowest possible cost to very small, small and medium commercial customers. Secondly, RightLights seeks to serve the greatest possible number of businesses that meet hard-to-reach (HTR) criteria, e.g., non-English speaking, geography, ownership status, etc. Ninety-eight percent of RightLights customers to date meet one or more HTR criteria.

A parallel goal of RightLights will be to continuously improve the program model so that process innovation drives the cost per unit of savings as low as possible without sacrificing quality or incurring lost opportunity. We believe there are still cost efficiencies to be captured as the program model matures and the scale and geography increases.

We will also work to “plant the seed” for potential future energy upgrades – both at work and at home – by educating and encouraging our customers.

As a result of their positive experience and knowledge gained along with their ongoing savings, RightLights participants are more likely to look for other ways to conserve energy, improve efficiency and be receptive to similar programmatic efforts. Quantec’s “Interim Evaluation of the 2004 RightLights Program” noted the following:

“Eight percent of the total respondents said they had adopted some of the energy-saving recommendations from the packet of materials that is left behind after participation. An additional 10 percent said they plan on adopting some of these recommendations in the future. A number of other respondents reported installing additional energy-efficient lighting equipment in their businesses and homes ... The approved net-to-gross ratio of 0.96, which includes both the impacts of free riders and spillover, appears to be slightly conservative based on the findings from this study.”

Non-Energy Benefits

Ecology Action’s program approach with RightLights also creates significant non-energy benefits (NEBs). Quantec’s “Interim Evaluation of the RightLights Program” quantified many of these benefits, a few of which are excerpted below²:

Utility Goodwill. *“... over one-third of the respondents (38 percent) saw a positive benefit in the fact that their utility was offering a program to small commercial customers, a traditionally underserved population.”*

Sales, Productivity, and O&M Impacts. *“Almost one in five (19 percent) of the full participants reported positive effects on sales and productivity (6 percent for the more limited QSP-only participants). Similar levels of positive benefits were reported for maintenance and lifetimes for equipment.”*

Lamp Mercury (Hg) Mitigation. The following data was gathered by the EM&V team regarding the lamps (mostly high-Hg T12 linear fluorescent) that were removed in the retrofit; all of which, absent the retrofit, would have been removed upon failure:

Disposal issues

- *81 percent Would have put in garbage for regular collection (the program diverted 81 percent bad disposal)*
- *5 percent Would have had them removed by certified contractor who disposed correctly*
- *3 percent Would have recycled them*
- *11 percent Don’t know / refused*

² NEB study by Skumatz Economic Research Associates (SERA), under contract to Quantec, LLC.

8. Strategy

RightLights key strategies that contribute to program success include:

- Free on-site Efficiency Survey (audit) offering unbiased expert assessment and recommendations tailored to participant needs
- Quick-Saver Package of CFLs (valued up to \$250) installed without cost or obligation, normally the same day as lighting survey
- Completely turn-key retrofit approach that facilitates customer participation
- Fixed, low-price bids on comprehensive retrofits
- Incentives that average ~80 percent of installed cost and are conferred immediately to the customer
- Trusted, trained, local lighting contractors
- Extensive local quality assurance and follow-up by program staff
- No surprises, no red tape, no hassles for participants
- Specification of retrofits by RightLights staff that minimizes contractor installation problems while maximizing verifiable and persistent energy savings

9. Objectives

RightLights is a resource program, and as such our primary energy savings goals are expressed in Section II - Item 2 above. Additional measure-specific impacts are shown below.

Lighting Penetration

At its current scope and budget, RightLights increases market penetration of lighting measures (from 2001 census baseline numbers) by ~1.5 percent each year within our target counties.

PRSV and Penetration:

Our field experience indicates that the current saturation of PRSVs is near 50 percent in the authorized areas. The additional 1,980 PRSVs will constitute approximately 25 percent additional penetration of the technical potential.

Vending Machine Controls Penetration

Saturation is currently estimated by the vendor representative to be < 10 percent. We estimate that the 1,344 vending machine controls we will install will constitute < 20 percent of the technical potential in RightLights' five-county area.

Refrigeration Measure Penetration

Measures installed by RightLights are estimated to penetrate < 10 percent of the cost effective potential within the five counties.

Ecology Action will serve at least 3,443 customers in 2006-08. A participant is defined as a qualified PG&E meter where one or more energy efficiency measures are installed through the program. We estimate that at least 15 percent of the customers who receive lighting retrofits will also receive non-lighting measures. The unit count of measures projected to be installed is presented in the accompanying cost effectiveness calculator workbook.

10. Implementation

Initial customer contact is typically made through an in-person visit by a RightLights Efficiency Specialist (auditor). While on-site the Specialist will complete a site survey focusing on lighting, refrigeration, and hot water systems. The survey contains the following elements:

Comprehensive Lighting Survey and Retrofit

The RightLights Efficiency Specialist performs a detailed analysis of the current lighting system and installs a “Quick-Saver Package” of CFLs valued at up to \$250 per business (both at no cost to the customer). Inefficiencies are identified and a cost-effective, comprehensive upgrade is designed. The data is entered into a special computer program which computes the utility savings, determines the instant rebate, then helps “build” the retrofit project and generates all necessary work orders, equipment lists, and contractor paperwork.

The Specialist then presents the comprehensive lighting retrofit plan and pricing for the approval of the business decision maker. The computerized report details project costs, instant rebate amount, annual utility savings, payback period, energy savings, and CO₂ abated. Based on first year kWh savings, RightLights rebates much of the cost of the lighting upgrades (averaging ~80 percent of the project’s installed costs). The kWh-based “instant” rebate can go up to 100 percent depending on the facility’s electric rate schedule. The table below shows the 2004-2005 rebate schedule:

Customer Peak Demand	Rate Schedule	\$ per kWh Saved	Cap (max % of job cost rebated)
Less than 100 kW	A1 and A6	13.5 cents	100%
Less than 100 kW	A10, E19, other	13.5 cents	85%
100 kW or More	All rate schedules	9 cents	80%

If the decision is made to proceed, a Program Installer (i.e., contractor) is assigned who visits the site within five business days, verifies the project parameters, then schedules and performs the retrofit. Jobs are typically completed within three weeks from the initial contractor visit. On an ongoing basis, RightLights staff audits a percentage of completed jobs to ensure quality and contractor compliance with program standards. After verification of satisfactory job completion RightLights issues the rebate directly to the contractor, typically within two weeks from receipt of contractor invoice.

This arrangement succeeds so well because:

- The process is totally turn-key for participating business owners (free audit, no obligation, up-front low fixed pricing, local support and follow-up, qualified contractors, no red tape).
- It preserves the business owner's capital (they get an "instant rebate" and can enjoy the savings immediately).
- The rebates cover much of the retrofit cost (average of ~80 percent for typical jobs).

Refrigeration

The Efficiency Specialist will determine customer eligibility for all refrigeration-related measures by verifying the presence and types of qualified equipment and gathering related data sufficient to meet the needs of the program's refrigeration contractors. The Specialist will seek customers' agreement to proceed with the following measures and services:

- ***Refrigeration Tune-Ups, Door Gaskets and Strip Curtains***
If eligibility is verified, the Specialist will obtain a customer agreement and will gather the needed data for transmittal to one of the program's refrigeration contractors. In addition, the Specialist will give information on applicable refrigeration controls, seek to generate customer interest in that measure (see below) and forward leads to the refrigeration subcontractor.

Interactive Refrigeration Controls and Equipment

This measure encompasses several sub-elements including door heater controls, compressor controls, fan motor replacement and intelligent system controls. Alternatively, door heater controls and/or fan replacements may be installed as separate measures. The Efficiency Specialist will educate qualified customers regarding these measures, explain the benefits, incentive and potential savings, and refer inquiries to one of the program's refrigeration contractors who will provide specifics for their system and close the sales. RightLights will track and oversee subsequent installations and provide the customer with maintenance instructions and warranty information.

Other Measures

The RightLights Efficiency Specialist will also determine eligibility for installation of the two energy saving measures shown below. Because both of these measures are provided at no cost to the customer and are simple to install, RightLights will likely install each in a targeted measure-specific delivery approach identical to Ecology Action's PRSV program (SmartRinse). These measures will always be directly installed and will never be "dropped off" for a customer to install. As with SmartRinse, field staff will canvas businesses door-to-door to sell and install the free measures in one visit whenever possible. Field staff for this targeted effort will also benefit from leads generated by the RightLights Auditors, and vice versa.

- ***Vending Machine Controls (Vend Miser)***
A vending miser consists of a control unit (vend miser) with ambient temperature sensor, and a separate motion detector. The vending machine is plugged into the vending miser, which is attached to a wall and plugged in to an outlet. The motion sensor is plugged in to the vending miser. RightLights staff will complete installation, coordinate with all involved parties (staff, facilities, beverage vendors, students, etc.), provide training and education on how the misers work, establish a system for when vending machines have to be moved, and provide subsequent follow up with customers and vendors.
- ***Pre-Rinse Spray Valves (PRSVs)***
We have retained PRSVs in our measure list for 2006. Despite the fact that Title 20 will mandate high efficiency PRSVs for new installations in 2006, many thousands of inefficient valves will remain in use indefinitely, and still thousands more unsold low-efficiency valves in the market pipeline will continue to be installed over the next several years until existing stocks are depleted. Customers have an extremely positive response to the PRSV, which can build in significant goodwill for other PGC-funded programs in the future.

11. Customer Description

RightLights will serve very small, small, and medium nonresidential PG&E customers with demand < 500 kW in San Mateo, Santa Clara, Santa Cruz, Monterey, and San Benito counties, as well as multifamily customers (common area measures only) in those counties. Customers include municipal and local government agencies, nonprofits, schools, and other institutions. For PRSV work, RightLights targets gas and electric customers in all of PG&E's territory except those areas served by water districts participating in other PRSVs programs.

12. Customer Interface

The program interface is virtually identical to RightLights 2002-05, in that the vast majority of RightLights participants will be presented a proposal and "sold" through direct, walk-in solicitations by our team of Efficiency Specialists (auditors) or installation contractors associated with RightLights.

The most significant variation for 2006-08 is that, on an as-appropriate basis, RightLights will align customers eligible for more complex energy efficiency measures with one of the program's approved non-lighting contractors, who will present detailed measure-specific analyses and attempt to complete sales and installations of those measures. In these cases, however, RightLights staff will continue to be the primary front-end customer interface as well as providing ongoing customer support and quality assurance. See #10 – Implementation above for additional customer interface details.

With respect to ease of use, Ecology Action participant surveys for RightLights 2002-03 found that 80 percent of respondents cited "Ease of Participation" as their primary motivating factor for using RightLights services.

According to Quantec's "Interim Evaluation of the 2004 RightLights Program,"

"The door-to-door marketing approach is extremely effective ... the Program auditors' on-foot, door-to-door, cold calling approach has been successful in breaking through traditional commercial energy efficiency barriers."

The report also found that *"The program materials are widely found to be quite clear, useful, and important in the decision to install ... The Program is successfully reaching businesses that were not likely to install energy efficient lighting on their own,"* and *"Satisfaction with the audit, installation, and lights is extremely high."*

13. Energy Measures and Program Activities

13.1 Prescriptive Measures. RightLights does not offer prescriptive measures. See the cost-effectiveness calculator for individual measure details.

13.2 kWh-Level Data. See the cost-effectiveness calculator for individual measure energy impacts.

13.3 Non-energy Activities

13.3.1 End-use Load

RightLights addresses lighting, refrigeration, and water heating.

13.3.2 Targeted Sector

Nonresidential customers, and common areas in multifamily buildings.

13.4 Subcontractor Activities. Stan Walerczyck of Lighting Wizards will continue in 2006-08 to provide RightLights staff with technical support on lighting technologies, market factors, O&M analyses, and will lead technical elements of staff and contractor trainings. Mr. Walerczyck will be available to assist our field staff as needed with advanced retrofit strategies and the design and sales of high efficiency lighting systems.

13.5 Quality Assurance and Evaluation Activities. With our past and current work, RightLights has controlled quality very effectively and inexpensively with a relatively small percentage of post inspections because our quality control occurs on multiple levels including system design, auditor and contractor training, and ongoing auditor and contractor QC/QA inspections. We will continue to inspect approximately 5 percent of audits and completed jobs with the exception of refrigeration measures, which warrant 100 percent post inspection.

RightLights Efficiency Specialist QC/QA.

- **Post-Audit.** After a Specialists' in-house and in-field training is completed, their first ~10 audited sites are inspected by the RightLights Operations Manager or designated Senior Specialist. These inspections are performed prior to the retrofit in order to confirm the Specialist's accuracy, knowledge, and ability to apply

appropriate retrofit strategies. Any deficiencies uncovered are addressed with additional training. Once ten consecutive inspections are passed successfully, the Specialist will randomly have 5-10 percent of their pre-retrofit audits inspected on an ongoing basis with additional inspections and appropriate supplementary training if deficiencies are discovered. This has resulted in a very high skill level among our team of Efficiency Specialists.

RightLights Program Installer QC/QA.

- **Pre-Installation.** This begins with tightly controlled equipment specification and the fact that only our own highly trained Efficiency Specialists are responsible for the retrofit design. Next, the assigned Program Installer performs a walk-through of the facility prior to accepting the job. At this time the installer may have a question or discover the need for a change order, which triggers a call to RightLights staff.
- **During Installation.** In the process of installation, if a Program Installer discovers anything requiring a change order (miscount, code violation, PCB ballasts, customer special request, etc.) they will contact the RightLights Specialist who performed the audit and/or a Program Coordinator, whereupon appropriate steps are taken and changes approved. This process assures the highest level of quality and customer satisfaction.
- **Post Installation.** We have been able to assure quality by inspecting the first 10 jobs done by each Program Installer. Any deficiencies must be corrected prior to payment of the rebate to the Installer, and additional training or correction is given as appropriate. Once ten consecutive inspections are successfully passed, ~5-10 percent of Installer jobs are subsequently inspected on a random basis if no other problems arise.
- **PRSV Verification.** Initial inspections will be performed on the first 5-10 installations completed by each new installer. Random inspections will continue thereafter, with a minimum of 10 percent of each installer's sites being verified. Installers are required to provide all old (removed) valves and associated site-specific paperwork, which will be cross checked to assure accuracy and validity of unit counts before payment of performance compensation to installer.

13.6 Marketing Activities. Marketing Activities include:

- Distribution of program flyers in Chamber of Commerce newsletters
- Attendance at Chamber of Commerce mixer events
- Generation of mainstream media coverage via press events and press releases
- Generation of referrals from satisfied customers
- In-person visits (the primary marketing tool for RightLights) to potential customer sites by a RightLights Efficiency Specialist (auditor)
- Public Service Announcements (PSAs) on radio and/or public television