

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Concerning
Energy Efficiency Rolling Portfolios, Policies,
Programs, Evaluation, and Related Issues.

Rulemaking 13-11-005
Filed November 14, 2013

**2014 ENERGY EFFICIENCY ANNUAL REPORT OF
PACIFIC GAS AND ELECTRIC COMPANY (U 39 M)**

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Pacific Gas and Electric Company (PG&E) submits the attached 2014 Energy Efficiency Annual Report in accordance with the August 8, 2007 *Administrative Law Judge’s Ruling Adopting Annual Reporting Requirements For Energy Efficiency and Addressing Related Reporting Issues* (Ruling), in Rulemaking (R.) 06-04-010 and direction from the California Public Utilities Commission (CPUC) Energy Division. Ordering Paragraph 2 of the Ruling requires “each utility to file its annual report on May 1 of the year following the end of a given program year.” Rulemaking 13-11-005 is the successor proceeding to Rulemaking 09-11-014.

PG&E prepared its report in accordance with the Annual Reporting Requirements Manual, Version 4 (Manual), that is Attachment C to the August 8, 2007 *Administrative Law Judge’s Ruling*. On April 28, 2015, the Energy Division issued a memorandum to the investor-owned utilities updating the reporting schedule for the 2014 Annual Report (narrative report and 2014 annual claims report) to June 1, to allow additional time for the utilities to incorporate values provided by the Energy Division in the 2013-2014 Lighting Disposition dated March 13, 2015. PG&E therefore timely submits its 2014 Energy Efficiency Annual Report.^{1/}

The report describes the programs that comprised the 2013-2014 energy efficiency portfolio and summarizes PG&E’s energy efficiency accomplishments for 2014. The report is posted to the CPUC’s Energy Efficiency Statistics website at:

<http://eestats.cpuc.ca.gov/Views/Documents.aspx>. To access the report, follow these steps;

- In the Report Category, select Annual.
- In the Report Type, select Narrative and Spreadsheets.

^{1/} The Manual provides at page 1 that “the due date for the Annual Reports may be changed upon request by the utilities and approval by the assigned ALJ and/or Energy Division in the Commission’s energy efficiency proceeding.”

- In Report Options, select PGE for Utility

Respectfully submitted,

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June 1, 2015



*Pacific Gas and
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2014 ENERGY EFFICIENCY ANNUAL REPORT



JUNE 1, 2015

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Executive Summary

Since the 1970s, Pacific Gas and Electric Company (PG&E) has worked to help Californians do more with less energy, while working to achieve state energy and environmental goals.

In 2014, PG&E continued its role as a leader and partner in energy efficiency (EE) in California by successfully delivering a cost-effective portfolio of programs. Through these programs, PG&E serves the diverse needs of over 15 million customers, speaking 88 distinct languages, across 70,000 square miles, in 10 different climate zones.

Serving homes, businesses, agriculture and industry across the state, PG&E expertly delivers EE solutions, empowering customers to eliminate unnecessary energy use, reduce their carbon footprint and save money. PG&E's portfolio of EE programs works to meet customers where they are on their EE journey through 10 Statewide programs and over 50 Local programs delivered via its network of Government Partnerships and Third Party programs.

In 2014, PG&E focused on several key efforts to help drive deep energy savings and further PG&E's commitment to helping its customers and California meet aggressive EE and carbon reduction goals.

Applying Data-Driven EE Solutions to Pursue Deeper EE Savings

In 2014, PG&E enrolled 14 office, grocery and institutional partners in the Commercial Whole Building (CWB) Demonstration. The CWB Demonstration leverages California's broad deployment of smart meter technology by using actual energy use data to validate customer savings and provides a pay-for performance incentive for actual savings. Through the project, PG&E is testing ways to unlock deep energy savings through whole building retrofits, and operational and behavioral measures across both gas and electric systems.

Transforming the Marketplace through Strong Industry Relationships

Working closely with ENERGY STAR® staff and other California and national utilities, PG&E's Residential Program team led a national expansion of the Retail Plug Load Portfolio (RPP) Pilot. The RPP Pilot aims to capture a large volume of small energy savings by motivating retailers to promote, assort, stock, and demand more energy efficient models. The pilot positions California one step closer to achieving the California Long-Term Energy Efficiency Strategic Plan (the Strategic Plan) goal to reduce plug loads by 40 percent by 2020.

PG&E Significantly Exceeded 2014 CPUC-Adopted Gross Savings Goals and Delivered a Cost-Effective EE Portfolio

In 2014, PG&E achieved:

- **142%** of its gross electric energy savings goal (845 gross annual GWh)
- **164%** of its gross electric demand reduction goal (164 gross summer peak MW)
- **143%** of its gross gas savings goal (29 gross annual million therms)

Strengthening EE Through Codes & Standards

Codes and Standards Advocacy met its 2014 goals of **239 net annual GWh, 32 net summer peak MW, and 0.55 net annual million therms.**

Delivering a Cost-Effective Portfolio of Programs

PG&E's total 2014 EE portfolio was cost-effective, at **1.38 TRC and 2.18 PAC.**

Reducing Greenhouse Gas Emissions

PG&E's EE programs **avoided 856,331 tons of carbon dioxide**, continuing as a strong partner in helping reduce California's greenhouse gas emissions.



Helping Customers Respond to California’s Drought

California is in the midst of an historic drought that has significantly impacted the ways in which many of PG&E’s customers, particularly its agricultural customers, do business. With the goal of helping customer save energy and water, PG&E allocated additional funding for pump efficiency tests to support increased savings from pump overhaul projects. By increasing funding for pump efficiency tests, and increasing project incentives, PG&E increased energy savings claimed by 45 percent compared to 2013 savings. PG&E also worked to serve agricultural customers of all sizes by providing incentives to 129 producers through the Advanced Pumping Efficiency Program (APEP) and scaling up the Low Pressure Irrigation Direct Install Third Party Program.

Mobilizing Schools Around Energy Savings – Proposition 39

PG&E is constantly looking for ways to serve the unique needs of approximately 900 K-12 Local Educational Agencies and over 6,000 K-12 schools in its service territory. Utility incentives and rebates are often essential to schools meeting the cost-effectiveness requirements of Proposition 39 (Prop 39), so PG&E took steps to enhance program offerings like increasing incentive and rebate budgets for K-12 schools to accommodate the influx of projects created by Prop 39. As part of its Third Party Program, School Energy Efficiency (SEE), PG&E added the Prop 39 SEE Bonus providing 30 underserved K-12 districts with benchmarking, energy auditing, and Prop 39 application support at no-cost.

Positioning Customers on the Path to Zero Net Energy (ZNE)

PG&E is readying customers to meet ZNE goals by 2020 through its residential and commercial new construction offerings, the Codes and Standards (C&S) Program and the Emerging Technologies Program (ETP). In an effort to better position single family residential customers on the path to ZNE, PG&E spearheaded the redesign of the California Advanced Homes Program (CAHP) to include all energy end uses in a home. PG&E’s C&S team also worked collaboratively with the Statewide C&S team to develop significant proposals for residential buildings, including improvements to attics, walls, lighting, and water heating, putting the state within striking distance of ZNE in the 2019 round of Title 24 standards.

Extending the Reach of Customers’ EE Dollars through Financing

PG&E’s EE financing programs play a critical role in the overall portfolio by allowing customers to pursue large, comprehensive efficiency retrofit projects that might not have been financially feasible otherwise. In 2014, the On-Bill Financing (OBF) subprogram experienced significant growth in applications and financed projects, totaling 479 loans issued for \$17.7 million. The financing pilots and programs provide a growing number of customers with a cost-effective tool to achieve deeper savings. A report released by EnergySmart Grocer implementer PECl (now CLEAResult), confirmed that customers that use OBF do larger projects that generate more energy savings.¹

Reducing Load Where It Really Counts

In 2014, PG&E made great strides toward deferring substation capacity expansion projects and repurposing projected capital expenditures through the launch of the Targeted Demand-Side Management (TDSM) for Transmission and Distribution (T&D) Reliability initiative. The initiative

¹ <http://aceee.org/files/proceedings/2014/data/papers/4-720.pdf#page=1>, “Widening Access to Energy Savings: Using On-Bill Financing to Bring Comprehensive Projects to Hard-to-Reach Customers,” presented by PECl and PG&E at the American Council for an Energy-Efficient Economy (ACEEE) 2014 Summer Study on Energy Efficiency in Buildings.



is a two-year campaign focused on reducing permanent load at four capacity constrained substations including the Bogue, Martell, Lammers and Barton substation. The initiative made significant progress towards the 2014-2015 kilowatt (kW) peak load reduction targets, while leveraging existing demand side programs, including a variety of Statewide and Local EE programs.

Meeting Customers on Their Energy Journey

As part of an approach to meet customers where they are on their energy management journey, PG&E leverages its diverse set of Statewide, Third Party and Government Partnership programs to provide EE solutions and empower customers to achieve comprehensive energy savings and to reduce greenhouse gas (GHG) emissions. As an example, through the launch of PG&E's Innovative Designs for Energy Efficiency Approaches (IDEEA365), PG&E offered innovative and targeted solutions to serve niche and hard-to-reach markets. PG&E stood up several new programs, including the Data Center Air Flow and Temperature Optimization subprogram, to serve small and medium sized data centers and several analytics-enabled retrocommissioning (AERCx) programs to provide cost-effective retrocommissioning (RCx) solutions for small and medium business customers.

Creating a Green Workforce

Through its Workforce, Education and Training (WE&T) Program, Connections, PG&E and the Statewide WE&T team realized excellent results in positioning students for "green" careers. Under the Connections subprogram, the PowerSave Campus Program provided training and resources in EE careers through internships for over 100 post-secondary students. Survey results indicate that 93 percent of those interns intend to pursue employment in energy and sustainability fields and that 77 percent of those students credited the program with their decision. The PowerSave Campus subprogram received the *Employer of the Year* award from the California Internship and Workforce Experience Association.

While the initiatives detailed above reveal a fraction of PG&E's 2014 successes, this Annual Report summarizes the full breadth of PG&E's successful, high-quality program delivery throughout 2014. PG&E will continue to deliver on its commitment to customers and help achieve California EE and GHG reduction goals through enhanced statewide coordination, innovative pilots and program strategies, and excellence in program administration.



Regulatory Compliance

Regulatory Background

On November 15, 2012, the CPUC issued Decision (D.) 12-11-015: Decision Approving 2013-2014 Energy Efficiency Programs and Budgets (dated November 8, 2012) (EE Decision), that adopted PG&E's 2013-2014 EE Portfolio funding and ordered PG&E to file various advice letters (AL) to modify programs and detail the program budgets in compliance with the EE Decision. On September 5, 2013, Commission Staff approved PG&E's compliance ALs and final EE program budgets and Program Implementation Plans (PIPs), effective January 1, 2013. The EE Decision authorized the EE programs for 2013-2014, as described in the "Program Description and Strategies" section below.

On October 24, 2014, the Commission issued D.14-10-046: Decision Establishing Energy Efficiency Savings Goals and Approving 2015 Energy Efficiency Programs and Budgets (Concludes Phase I of Rulemaking (R.) 13-11-005), (dated October 16, 2014) (Phase I Decision).

The Phase 1 Decision, as corrected by D.15-01-002 and D.15-01-023, approved PG&E's total 2015 EE portfolio budget. The Phase I Decision also approved 2015 Demand Response (DR) funding for Integrated Demand Side Management (IDSMS).

The Phase I Decision (at pp. 30-32) determined that 2015 is the third year of a 2013-2015 portfolio cycle, allowing PG&E to use unspent 2013-2014 funds in 2015, to count savings from 2013-2014 towards 2015 goals and cost effectiveness, and to calculate regulatory caps and targets. The tables included in PG&E's 2014 EE Annual Report reflect the approval of a three-year 2013-2015 Portfolio Cycle.

The Phase I Decision is discussed in more detail in Appendix B to this report, along with other EE-related rulemakings, decisions and resolutions issued by the Commission in 2014. Appendix B also includes a list of PG&E's advice letters filed in 2014, including an update for advice letters filed in 2013 that were discussed in the 2013 PG&E EE Annual Report, but not approved at the time the report was filed.

On April 27, 2015, CPUC Energy Division Staff issued a Memorandum that changed the due date for the 2014 EE Annual Report from May 1 to June 1, to allow additional time to incorporate new savings values for lighting measures for program years 2013-2014 that the CPUC provided in March 2015. This Report incorporates those values and is timely filed.



Annual Report Data

In 2014, PG&E achieved 845 gross annual gigawatt-hour (GWh), which is 142 percent of the CPUC-adopted electric energy savings goal; 164 gross summer peak megawatt (MW), which is 164 percent of the CPUC-adopted electric demand reduction goal; and 29 gross annual million therms, which is 144 percent of the CPUC-adopted gas savings goal for IOU programs. C&S Advocacy met its 2014 goals of 239 net annual GWh, 32 net summer peak MW, and 0.55 net annual million therms. In addition to helping customers save energy and money, PG&E's portfolio of EE programs continued to significantly contribute to the state's goal of reducing GHG emissions, with avoided emissions of 856,331 tons of carbon dioxide (CO₂). PG&E's total portfolio was cost-effective, with a 1.38 Total Resource Cost (TRC) and 2.18 Program Administrator Cost (PAC), including C& S Advocacy, compact fluorescent lamps (CFL) rebated in 2010-2012 that were installed in 2013-2014, and 5 percent spillover. Please see Section 4 for more specifics on PG&E cost-effectiveness.

D.12-05-015 established separate annual targets for IOU programs on a gross basis and C&S Advocacy on a net basis. The C&S Advocacy goals were updated in the EE Decision. As stated above, in 2014, PG&E exceeded its gross annual savings goals, and met its C&S net savings goals for 2014. PG&E is showing net and gross goals separately in the Annual Report.

Total portfolio gross energy savings shown in this report include: (1) savings associated with PG&E's deemed savings program, which includes Database for Energy Efficient Resources (DEER), and final approved work paper values from the 2014 customer energy savings projects; (2) savings associated with custom projects that were installed in 2014; (3) savings associated with behavioral programs that occurred in 2013; (4) \$21.6 million in shareholder earnings for program year 2011 awarded in 2013, pursuant to Resolution G-3491 (D.12-12-032); and \$36.3 million awarded in 2014, pursuant to Resolution G-3497 (D.10-12-049 and D.13-09-023); (5) savings for the Bay Area Regional Energy Network (BayREN) and Marin Clean Energy (MCE);² and (6) Energy Savings Assistance (ESA) Program savings.³ PG&E's savings data for lighting is based on its ex ante lighting guidance and dispositions and includes updates only to the high impact workpapers based on the May 30, 2014 disposition. PG&E updated the lighting data (to include all the portfolio summary savings information and cost-effectiveness, at the minimum) for June 1, 2015 after working with Commission Staff and its consultants to update the lighting savings based on the final disposition values.

The EE Decision affirmed the 10 percent on utility administrative cost cap, 6 percent marketing cost target, 4 percent Evaluation, Measurement and Verification (EM&V) cost cap and direct implementation non-incentive target of 20 percent. The budget for EM&V for the 2013-2014 Program Cycle is 4 percent of the Program Portfolio, including BayREN, MCE and Statewide Marketing, Education and Outreach (SW ME&O).⁴ Statewide ME&O is excluded from the marketing target.⁵ PG&E reports its progress against these caps and targets in quarterly

² Savings for BayREN are from their 2013 and 2014 Annual Reports. Savings for MCE are from their December 2013 Monthly Report, submitted on January 17, 2014, and their 2014 Annual Report, submitted on April 15, 2015.

³ Total portfolio energy gross savings shown in this report include energy savings from CFLs rebated in 2010-2012 that were installed in 2013-2014.

⁴ D.12-11-015, p. 59.

⁵ D.13-12-038, p. 82.



reports posted on the CPUC’s Energy Efficiency Statistics (EE Stats) website (<http://eestats.cpuc.ca.gov/>), along with quarterly fund shifting reports. PG&E’s monthly expenditures and savings reports are also posted on EE Stats. In compliance with annual reporting requirements, PG&E has also provided a 2014 Annual Report Spreadsheet and revised December 2014 Monthly Report (posted to EE Stats under “Annual Reports”) which have been “updated with the most current and accurate data at the time the annual report is being submitted.”⁶

In addition, the IOUs and Commission Staff are working towards a collaborative solution that utilizes frozen ex ante savings parameters and tracking data for reporting in an effort to align and help draw a connection between IOU energy savings reports and impact evaluations.⁷

⁶ 2006-2008 Energy Efficiency Portfolio Annual Reporting Requirements Manual, Version 4 (August 8, 2007), p. 2.

⁷ D.12-05-015, p. 397, Conclusion of Law 90.



Program Descriptions and Strategies – Statewide Programs

In 2014, the IOUs administered 10 Statewide programs that covered every market sector and customer type, across all technology families, and used a variety of market intervention strategies from upstream rebates targeted at manufacturers and distributors to buy-down the cost of the product for the end-use customer to midstream and downstream incentives. These programs support the Strategic Plan goal to provide a more integrated EE experience for customers and to provide customers with access to information and greater financing opportunities to promote ZNE in commercial and residential buildings. The Industrial and Agricultural programs help provide cost-effective and reliable services to help build market value and demand for EE in these market sectors.

This section describes the successful strategies and accomplishments employed by PG&E in 2014 for the following Statewide programs:

1. Residential
2. Commercial
3. Industrial
4. Agricultural
5. Lighting
6. Codes and Standards
7. Emerging Technologies
8. Workforce Education and Training
9. Integrated Demand-Side Management
10. Financing



Residential Program

PG&E's Residential EE programs offer a robust suite of incentives, services and tools aimed at helping customers eliminate unnecessary energy use, save money, and enhance home comfort. The programs engage and support customers and other market actors through a variety of channels and tactics including:

- Through built environments such as whole home upgrades, Heating, Ventilation and Air Conditioning (HVAC), or new construction
- By engaging retail and manufacturers on plug loads and appliances
- Through behavioral-based and home energy management tools and initiatives

PG&E's Residential Sector and Program Quick Facts

- **5.4 million** residential customers in PG&E's service territory
 - **18%** live in multifamily buildings (five or more units)
 - **66%** are renters
 - **2.7 million** have online accounts
- **\$124** average monthly bill
- The residential sector accounts for **32%** of electric and **36%** of statewide gas usage

Key Initiatives

PG&E's Residential Program priorities described below are based on supporting overall program objectives and energy savings goals and leveraging PG&E as a leader in residential EE, both in California and nationally, and serving our customers where they are on their energy journey.

Home Upgrade

The Statewide Home Upgrade Program seeks to transform the residential EE market to a place where whole home upgrades are valued and part of standard practice for homeowners. This approach views the building as a set of interdependent systems that must be considered holistically. The Home Upgrade Program is designed to offer a one-stop approach to whole-house energy efficient improvements. In its holistic approach and deeper-savings design, this program aligns with Strategic Plan goals, supports Assembly Bill (AB) 758, and is seen as a key tactic to address energy usage in existing homes by California's regulators and industry stakeholders. Existing residential buildings account for 32 percent of California's electric usage.⁸ The two program approaches, Home Upgrade and Advanced Home Upgrade help address this large savings potential and help customers achieve deep energy reductions.

2014 PG&E Home Upgrade Highlights

PG&E's Home Upgrade Program completed 5,039 jobs in 2013-2014, which accounts for 60 percent of the 8,458 total jobs completed statewide in 2013-2014 by the six program Administrators (including the regional energy networks). PG&E also experienced a 30 percent job increase over previous years, while achieving an average of 29 percent modeled savings for Advanced Home Upgrade participants. The program delivered savings of over 4.1 MW, 2.77 GWh, and 0.47 million therms in 2014. The increase in jobs performed and in customer

⁸ California Energy Efficiency Strategic Plan, January 2011 update, Section 2, p. 9:
http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.

energy savings is even more impressive considering that the sales climate has change significantly since the end of funding provided by the American Recovery and Reinvestment Act of 2009 (ARRA).

PG&E is also demonstrating industry leadership by leading the work to expand allowable software options for the program (CalTEST), which will increase accuracy of savings predictions, improve program sales and market investments, and enhance customer experience. The first round of CalTEST was completed in the fall 2014 with new, more accurate and user friendly, software entering the program in early 2015.

PG&E launched the TDSM initiative, which included select measures and targeted marketing to support T&D efforts, with early signs of progress. PG&E also enhanced the contractor experience to support program participation and success. Based on recent surveys, 97 percent of participants would recommend our program to friends or family.

Plug Load and Appliances

Plug Load and Appliances addresses the largest area of growth in energy consumption in the average residential household through tactical marketing initiatives, retailer engagement and new product deployment. The program provides solutions for the key issue of increasing energy usage from products not covered by state or federal efficiency standards. The program is continuing to offer successful rebates and incentives to customers for purchasing and installing high efficiency appliances (such as ENERGY STAR® rated appliances), recycling inefficient refrigerators and freezers, and working with other partners to drive the adoption of higher efficiency products as well as water saving measures. In addition, PG&E is exploring ways to make applying for rebates more user-friendly, as well as new product opportunities.

Energy Advisor

Energy Advisor increases customer adoption of online tools to support home energy management and associated energy savings opportunities. The program works to support customer’s understanding of how they use energy, and actions they can take to become more efficient. In addition, Energy Advisor offerings help drive customer uptake and engagement in our program offerings, and apply new approaches to driving energy savings through technology innovations, big data and social behavior influence

PG&E’s Key Residential Program Goals

- Help inspire and empower our customers to eliminate unnecessary energy use
- Serve as a “trusted energy advisor” for customers to support their energy management journey
- Reduce the barriers to participate in EE opportunities and enhance the benefits of participation
- Focus on providing comprehensive, bundled solutions for customers
- Provide customers with enhanced on-line options and processes
- Foster strong relationships with retailers, distributors and manufacturers
- Develop close partnerships with cities, contractors and local community organizations
- Support market transformation efforts and Strategic Plan goals
- Support T&D deferral efforts





Comprehensive Multifamily Support

Comprehensive Multifamily Support implements new and innovative ways to support this traditionally underserved market segment and provide leadership in innovative multifamily program offerings. PG&E is focusing on identifying new approaches to enhance the participation of multifamily complexes engagement and participation with EE. The new Multifamily Upgrade Program, an element of the Home Upgrade subprogram, aims to provide richer incentives that better align with the decision making of property managers and tenants, along with messaging that resonates with this group.

Residential Subprograms

Residential Energy Advisor Subprogram

The Residential Energy Advisor subprogram uses behavioral outreach initiatives and interactive tools, including the Home Energy Report (HER) and Home Energy Checkup (HEC), to engage customers and encourage participation in innovative energy initiatives. The program helps customers understand how and when they have been using energy. The suite of products and services enable customers to improve their EE, understand and manage their energy use, and where appropriate, will be guided to whole-house energy solutions. The HER is sent to over 1 million customers on an ongoing basis to show how their energy usage changes over time and how their usage compares with similar homes in their area. The HEC is a self-guided online assessment that helps customers understand where they use energy in their homes, provides energy-saving tips and suggestions based on their specific situation, and generates a simple checklist plan saved on their PG&E My Energy website to enable customers to track their progress as they complete the items on their plan.

2014 Strategies and Successes

In 2014, PG&E continued to fine tune an integrated customer journey that starts with a HER, motivating the customer to perform an online HEC, and finally to take advantage of PG&E's rebates and incentives to make EE and whole home upgrades affordable.

PG&E focused on the enhancement and expansion of the HER product, a personalized mailer aimed to create positive energy change to a broad consumer base by showing the consumer their home's energy use and how they compare to similar homes in their area. Based on learnings from the first waves of reports, PG&E launched additional waves to reach over 200,000 new customers. Currently, 1.2 million active customers are enrolled in HER. PG&E also launched email Home Energy Reports to 200,000 existing HER recipients to complement the mailer and drive deeper engagement in the online channel.

PG&E also focused on boosting marketing efforts to attract more customers to complete the online self-audit. This resulted in 29,000 new customers who completed the HEC well exceeding PG&E's anticipated response of 5,000 online audits.

Plug Load and Appliances Subprogram

The Plug Load and Appliances subprogram offer rebates and incentives to customers for purchasing and installing high efficiency appliances and pool pumps, recycling inefficient refrigerators and freezers, and working with other partners to drive the adoption of higher efficiency products as well as water saving measures. The program team also worked with ENERGY STAR® staff and other utilities to lead a national expansion of a PG&E RPP Pilot aimed at establishing a cost-effective methodology that provides customers with mid-stream incentives through retailers in order to capture the large volumes of small energy savings from

many plug-load devices. Additionally, the Statewide IOU Program team has launched a Residential Solutions Workbook project, an EM&V effort to help design and manage residential efficiency programs by aggregating and displaying market and energy use data through a single tool.

2014 Strategies and Successes

PG&E offered rebates to residential end-use customers to cover some of the incremental costs of purchasing energy-efficient products. This included clothes washers, gas water heaters, electric heat pump water heaters, refrigerators, variable speed pool pumps, and appliance recycling. The products were rebated through online or mail-in application processes, while refrigerators and electric heat pump water heaters were also rebated through point-of-sale rebates in stores.

The program was supported by a field services team who provided salesperson training, point of purchase (POP) materials, and in-field support to retail partners. In 2013 and 2014, PG&E had a total of 156,869 applications for the program, which were received via mail, online and at retail point-of-sale. This was mostly attributed to ongoing work with water agencies on joint water/energy savings measures, use of POP material, and online messaging about rebate availability in stores and on retailers’ websites.

For the Appliance Recycling Program (ARP), PG&E was able to exceed its goal through increased outreach and targeted marketing, retail sales associate incentives, and “one-touch” program “instant-rebate” retail on-site delivery.

In 2014, PG&E ran a highly effective marketing campaign for ARP that included an engaging television commercial, 300,000 targeted direct mail pieces, 1,000,000 targeted emails and a media event which resulted in six media outlets reporting about the program. For the targeted mail and email, PG&E used customer usage data to target optimal customers for ARP, those assumed to have a second refrigerator or freezer due to high base load energy consumption. PG&E optimized the in-store retail marketing campaign with new POP signage materials, which were designed to increase program uptake during the purchase of a new refrigerator, since new refrigerator purchases are often an opportune moment to promote refrigerator recycling.

Multifamily Energy Efficiency Rebates Subprogram

The Multifamily Energy Efficiency Rebates (MFEER) subprogram offers a variety of incentives for energy-efficient products and services to motivate multifamily property owners and managers to install the products. These products can be used to save energy in both common and dwelling areas of multifamily complexes and in common areas of mobile home parks and condominiums. An additional objective of the program is to heighten the EE awareness of

“One-Touch” Instant Rebates Lead to Increased Participation in PG&E’s Appliance Recycling Program

In 2013 and 2014, the “One-Touch” Retailer “instant-rebate” approach for ARP continued in an effort to provide a more efficient program option of picking up an old unit for recycling at the time of new refrigerator delivery.

The “One-Touch” approach was active in all of the Sears and Western Appliance locations in PG&E’s electric service areas.

Adopting a successful tactic from SCE, PG&E also offered sales associated rewards to incentivize store associates to schedule the customers’ recycled appliance pick-up upon purchase of a new refrigerator in store.



property owners, property managers, and tenants. The program also collaborates with the BayREN and MCE for multifamily event coordination and via a common initial customer interest form to help determine the best solutions to offer.

2014 Strategies and Successes

In an effort to maximize the savings potential and benefits for customers, MFEER coordinated with the ESA and other EE programs, such as the Multifamily Upgrade Program. This integrated approach combined market-rate and income-qualified EE measures.

PG&E and the other IOUs continued to advertise in various apartment industry trade publications and participated in several trade shows promoting MFEER and other related programs. As a result, the program has maintained continued engagement with energy specialists and property management firms.

PG&E broadened its Distributor Water Heater incentive offering within its Residential Program to include multifamily sites for domestic hot water central systems of five or more units. Similarly, PG&E began to offer a Pool Pump Retailer Rebate to participating pool contractors who purchase and install qualifying pumps in the multifamily sector.

Home Upgrade Subprogram

The Home Upgrade Program provides incentives for comprehensive home upgrades to single family and multifamily residential customers. The program guides customers to do energy savings retrofits using a whole house approach that allows customers to achieve deeper and more comprehensive energy savings.

2014 Strategies and Successes

PG&E’s Home Upgrade Program has garnered much success throughout 2014, achieving a high satisfaction rate among participants, accounting for 60 percent of all Home Upgrade jobs completed in California, and achieving 29 percent average savings per participant, as reported earlier in this report.

PG&E is particularly focused on safety and customer satisfaction, as each potential participant receives industry leading combustion appliance safety testing. PG&E also ensures carbon monoxide monitors are installed to promote continued safety.

PG&E worked collaboratively with the statewide team on the redesign of the Advanced Home Upgrade incentive structure. An important element of the redesign included the removal of the incentive cap and rewarding kilowatt-hour (kWh) and therm savings instead of focusing on site percentage reductions to increase cost-effectiveness and drive deeper energy savings projects. In addition, a windows measure and higher efficiency tiers of HVAC were added to the Home Upgrade path.

**Serving Our Customers
Home Upgrade Program Offers Diverse
Benefits for Customers**

- **2014 Energy Savings:** Averaging 29% savings for participants and delivered over 4.1 MW, 2.77 GWh, and 0475 MM Therms
- **Non-Energy Benefits**
 - Home comfort
 - Savings on energy bill
 - Saving Energy
 - Rebates and incentives
 - Helping the environment
 - Better air quality and health
 - Increased home market value





The statewide team expanded allowable energy modeling software options for the program via a new testing method called CalTEST, which will increase the accuracy of energy savings predictions, improve program sales/market investments, reduce administrative burden for participating contractors and enhance customer experience.

What's more, the statewide team hired Navigant Consulting to help create a successful market transformation framework for Home Upgrade, with a focus on the program objectives to become market practice in 10 years.

PG&E has continued to streamline program participation tracking. Building on 2013 improvements, the IOUs have continued to work closely with program participants to identify and resolve application and process challenges through improved desktop review practices and inspection processes and additional training to contractors.

PG&E refined local marketing and outreach targeting efforts by leveraging insights from past participants to identify the customer attributes linked to propensity to participate and the building attributes (such as age of the home) tied to higher potential savings. In addition, PG&E used customer usage data indicative of failing HVAC to target optimal customers for the Home Upgrade Program through both email and direct mail. PG&E continues to innovate building a more robust contractor channel via collaborative approaches such as integration of AC Quality Care and Home Upgrade and concierge mentoring.

In support of the TDSM initiative, PG&E launched locational kickers for air conditioning and pool pumps in conjunction with Advanced Home Upgrade to support T&D deferral efforts in targeted substations. This effort was launched in June and paired with a direct mail and email campaign in the fall. While the decision-making and upgrade process for projects in this program are usually three to six months, PG&E has early signs of success with 22 projects receiving the locational kickers in 2014.

Continuous Improvement Opportunities for the Home Upgrade Program Yield Benefits

Concierge mentoring is a new initiative that began in 2014 to increase the production of a handful of participants through a customized, in-depth and ongoing intervention plan. This is different than the traditional "key account" process that focuses more attention on high producers, and instead focuses on a ground up approach with contractors with the ability to scale.

The customized marketing, business, quality and sales support for these seven contractors resulted in a 65% increase in the number of jobs they submitted. In 2015, we will be looking for opportunities to scale this offering to more participants.

Residential New Construction Subprogram

Residential New Construction consists of the CAHP for single family homes and PG&E's California Multifamily New Homes (CMFNH) Third Party Program. The CAHP Program and Third Party CMFNH programs provide comprehensive support for saving energy in the residential new construction sector with a cross-cutting focus on sustainable design and construction, green building practices, EE, and emerging technologies. Through a combination of education, design assistance and financial support, CAHP works to encourage building and related industries to exceed California's Title 24 EE standards, and to prepare builders for future changes to these standards.

2014 Strategies and Successes

2014 was another successful year for CAHP, accumulating enough energy savings goals and unit participation to surpass the program's targets. The residential new construction market has



continued the improvement seen in 2013, providing the program good opportunities for productive engagement with the residential new construction industry. The recent and future tightening of California Title 24 standards have kept the program focused on continuing to improve and enhance its efforts to save energy for utility customers and to support the State's ZNE goals.

While weathering an expected dip in enrollment after the implementation of the Title 24 standards that went into effect on July 1, 2014, CAHP aimed longer-term and launched a revised program model.

Expanding the program model to include all energy end uses in a home is fundamental for the program to continue to meet its energy savings objectives and to be a driver to support achievement of the State's goal for all residential new home construction to be ZNE by 2020. The program is now positioned to not only address the Title 24 regulated loads, such as heating, cooling and hot water that have reduced savings potential, but also non-regulated loads, such as plug loads and appliances that still have untapped savings potential.

Since another challenge of increasingly stringent Title 24 standards involves measures necessary to reach qualification that are more difficult than ever to implement and involve new whole building design changes, CAHP also began a strategic program initiative to address these concerns working directly with the builders/design teams.

Residential HVAC Subprogram

Residential HVAC is focused on driving EE and peak load reduction from our customers' use of heating and air conditioning. The program promotes increased quality levels in the HVAC market for technology, equipment, installation, and maintenance. In addition to working with HVAC contractors on improving HVAC maintenance and installation practices through a program called AC Quality Care, the program has recently launched small-scale pilots of both a HVAC distributor incentive program to sell more high-efficiency units and an incentive program to improve HVAC code and permit compliance.

Strategies and Successes

The Residential HVAC Quality Maintenance (RQM) program made improvements effective in December 2013 and throughout 2014 that led to increased contractor participation and treatment of over 14,000 HVAC units in 2014; almost triple the 2014 goal of 5,300. Contractor participation in the RQM program nearly doubled from 48 in 2013 to 82 in 2014. These successful program improvements included:

- Concerted contractor outreach and mentoring efforts.
- Adjusted measures and increased incentives to motivate customers to engage in "starter" assessment measures, and to motivate deeper, multiple-measure savings through a comprehensive kicker incentive.

PG&E Spearheaded the Redesign of the California Advanced Homes Program to Better Position Customers on the Path to ZNE

Designed to meet the following goals:

- Establish CAHP as a vehicle for ZNE market transformation in the California building industry
- Include all energy end-uses within a home's envelope
- Create a program that can adapt to new technologies
- Encourage advanced building in all climate zones
- Be simple for builders to participate, simple for utilities to implement



- RQM contributed 62 percent (104 kW) of the Residential T&D demand reduction at the Lammers Substation.
- Residential HVAC “upstream” distributor incentive and Code Compliance pilot launches were completed on time in 2014.
- Targeted recruiting efforts into Residential Quality Installation classes brought participation from 34 up to 95 percent of goal in Fourth Quarter (Q4) of 2014.



Commercial Program

The Statewide Commercial Energy Efficiency Program offered California's commercial customers a statewide-consistent suite of products and services to overcome the market barriers to optimized energy management. The program targeted integrated energy management solutions, including EE, DR, and Distributed Generation (DG), through strategic energy planning support; technical support services, such as facility audits, and calculation and design assistance; and financial support through rebates, incentives, and financing options.

Targeted end uses included all commercial sub-segments such as offices, retail facilities, restaurants, food stores, schools, colleges, universities, lodging facilities, municipalities, health facilities, distribution warehouses, and smaller business customers. PG&E also offers local program elements such as Third Party and Government Partnership programs that complement and enhance these core offerings.

Key Initiatives

Commercial Whole Building Demonstration: PG&E developed and launched in late 2013 the CWB Demonstration as a proof of concept for a pay-for-performance initiative targeting deep energy savings in existing commercial buildings. One of the ways CWB is unique is that it relies on data science and actual energy, weather and other data to validate customer savings, made possible by California's broad deployment of smart meter technology. Not all buildings or efficiency projects are suitable for this approach, which is why recruitment for the Demonstration was conducted on an invitation-only basis and targeted toward high potential buildings and projects designed to achieve 15 percent or more energy savings. As of May 2015, PG&E had 13 active projects enrolled in the Demonstration from across its service territory, drawn from office, grocery and institutional properties generally ranging between 20,000 and 100,000 square feet in size. Project implementation will continue through 2015, with final results largely determined by 2016.

TDSM Initiative: In 2014, PG&E launched the TDSM initiative, a two-year campaign focused on leveraging existing demand side programs, including EE, to reduce peak load on specific substations leading to deferral or reduction in distribution capital spending. Through the effort, PG&E targeted four constrained substations including Bogue, Martell, Lammers and Barton, and made significant progress towards the 2014-2015 kW peak load reduction targets.

Energy Insight: PG&E migrated to a cloud-based customer relationship management, and project tracking and collaboration platform called Energy Insight to more effectively and efficiently track EE projects, automate processes, as appropriate, and keep the team of EE experts abreast of project status, updates, program offerings, strategies, and rules.

Continuous Improvement Initiatives: PG&E continues to regularly collaborate with other IOUs to maintain statewide consistency. PG&E also successfully collaborates with a wide

PG&E's Commercial Sector Quick Facts

- **2014 Commercial Program Stats**
 - Reduction of **31.8 MW peak demand**
 - Elimination of **161.3 GWh** electricity use
 - **7.7 MM Therm** at a net benefit to the California ratepayer (1.5 TRC)
- Commercial sector accounts for **38% electric** and **25% natural gas usage** statewide
- Top Commercial Facility Types for Gas and Electric Usage:
 - Offices
 - Restaurants
 - Schools & Colleges

variety of commercial EE industry stakeholders including large commercial property management firms, architects and new construction design teams, product manufacturers, distributors, retailers, contractors, trade professionals, product rating agencies (ENERGY STAR®, Design Light Consortium, etc.), industry groups (Western HVAC Performance Alliance, CCC, etc.) loan origination agencies, and more.

2014 Strategies and Successes

PG&E focused on several key strategies in 2014 to best position its programs to achieve the Strategic Plan vision for the Commercial sector—“Commercial buildings will be put on a path to zero net energy by 2030 for all new and a substantial proportion of existing buildings.”

Specifically, PG&E leveraged its full breadth of program offerings to best meet the needs of its diverse commercial customer base. Meeting customers on their energy journey is of paramount import to PG&E. In 2014, PG&E was able to do just that through its statewide subprograms dedicated to the main non-residential EE project channels (new construction, retrofit, RCx, auditing), supplemented by Third Party programs dedicated to niche, hard-to-reach segments.

Deep engagement with contractors, trade professionals, building engineers, design teams, energy service companies (ESCO), manufacturers, retailers, and distributors allowed PG&E to deliver a wide variety of intervention strategies to provide customers with better access to information about their energy use. This strategy also helped identify and prioritize ways to reduce energy use and increase EE, and provided tools and opportunities to further the affordability of EE projects in both new and existing facilities.

Via implementation of the “deemed must go deemed” rule, PG&E was able to continue its efforts to reduce program administration costs, and streamline access to program offerings for many commercial customers.

Opportunities Moving Forward

To continue to meet the state’s ambitious energy savings and carbon reduction goals, and put our customers on the path to deep and persistent energy savings, PG&E is instituting a number of new strategies in the year to come. For instance, at the start of 2015, PG&E implemented a minimum incentive threshold for the Calculated Incentive Program to help improve the cost-effectiveness of the program with minimal effect on savings. Customers and projects that do not meet the minimum incentive can participate in other programs as needed, such as Government and Community Partnership Regional Direct Install programs. PG&E is also introducing innovative new deemed product offerings including additional light emitting diode (LED) measures and deemed measures catering to data centers and lab facilities.



The Commercial Program allows customers to install equipment and systems that are more efficient than they would install without the program. In addition, customers’ confidence in the persistence of their savings is increased by the program’s commitment to installing high quality, reliable, cost-effective measures.

Building on lessons learned and best practices identified in the CPUC’s 2010-2012 impact evaluations and through the ex ante review process, PG&E is working collaboratively with the statewide Savings by Design (SBD) team and Commission Staff to better align the program on

the path to ZNE. Additional program enhancements include offering modeling approaches for tenant improvements.

PG&E is exploring opportunities to reshape its Commercial HVAC Quality Maintenance offering to allow for multiple paths for customer participation in 2016. The program design will include tiered pathways for participation based on the customers' needs and will align more closely with the statewide program design.

In addition, working closely with the statewide team, PG&E is investigating ways to update its RCx Program offering to better serve smaller facilities and incorporate lessons learned and best practices from ex post evaluations and ex ante review processes. What's more, PG&E will continue to support the TDSM initiative on the four substations identified above.

Statewide program design and implementation offers many benefits, including making it more efficient, comprehensible, cost-effective and appealing for multi-site customers, Third Party Program providers, contractors, distributors, retailers, lenders, state and federal agencies, and other market actors and stakeholders to participate. For these reasons, PG&E will continue its efforts to best coordinate on statewide program design and implementation, while attending to local and regional needs of diverse customer bases.

Statewide Commercial Subprograms

Commercial Calculated Incentives Subprogram

The Commercial Calculated Incentives subprogram provides financial incentives for non-residential customers to install new equipment or systems that exceed applicable code and/or industry standards in existing buildings. For PG&E, the Calculated Incentive subprograms include Customized Retrofit and RCx. RCx represents an important tool in PG&E's EE toolkit. Through RCx, PG&E strives to reduce energy usage and increase the efficiency of mechanical equipment, lighting, and control systems in existing facilities. To do this, PG&E offers financial and technical assistance for customers to undertake RCx projects and implement measures that improve facility operations.

Serving Our Customers:
Through its Third Party Program channel, PG&E offers commercial customers a suite of targeted, niche program offerings designed specifically to meet them on their customer journey.

In 2014, Third Party programs targeted retail, small and medium businesses, large offices, hospitals, and grocery stores, and focused on a variety of technologies including HVAC, advanced LEDs, boilers and more. Additional details may be found in the Third Party programs section of this report.





Strategies and Successes

In 2014, the Customized Retrofit subprogram paid incentives for 500 projects—of which 33 individual projects accounted for 50 percent or more of the subprogram savings by metric. Identifying, nurturing, and completing these high impact projects significantly helps to meet savings and cost effectiveness goals.

Much of 2014 involved preparing the market for Title 24 changes and its effect on savings claims and measure eligibility. In addition, PG&E focused significant attention on implementing the “deemed must go deemed” rule, which requires deemed eligible measures to follow the deemed path. This rule helps to improve the cost-effectiveness of both the Calculated and Deemed subprograms by eliminating redundant calculation efforts and maximizing the use of pre-calculated, prescriptive deemed workpapers.

Through implementation of Energy Insight, a cloud-based, EE collaboration software platform that allows PG&E to track EE projects and automate processes more effectively, the Commercial team was able to improve its ability to carefully track commercial projects from pre-application to initial site visit, analysis, Third Party review, installation, and post-installation inspection. This has allowed PG&E to identify opportunities for additional savings and ensure accurate energy savings calculations and adherence to program rules. In addition, Energy Insight enhances PG&E’s ability to more fully connect account representatives, partners and program management. This tool also serves as a central repository for program, project, and measure data and an internal social networking platform for implementers and engineers to communicate about program offerings, strategies, and program policies and rules.

PG&E has been working to improve the way it delivers RCx, leveraging lessons learned and best practices from 2010-2012 impact evaluations and ex ante review guidance. In particular, PG&E has developed RCx-specific trainings for its engineering teams, program managers and third party vendors. These trainings help to align the team on policy, baselines, measure, reports, calculation tools and methods. In addition, PG&E has established more rigorous quality control amongst its RCx consultants, focused specifically on report quality and program compliance.

To drive more demand savings, PG&E increased the incentive rate for peak demand from \$100/kW to \$150/kW in the Custom Retrofit Program in coordination with the statewide IOUs. This helped balance the incentive structure between kW and kWh, ensure PG&E was able to meet its 2014 savings targets, and position more of our commercial customers for greater energy savings and bill reductions.

PG&E Positions Customers to Meet ZNE Goals

In December, 2013, the Berkeley Public Library opened a state-of-the-art “West” branch designed to consume no more energy than it produced. Thanks to the latest solar technologies and innovative building features, the sun supplies the library with both electricity and heat. On the demand side of things, architects maximized natural light and ventilation, among other efficiency features.

The results? Over the past 12 months the library actually produced about 10% more energy than it consumed. And, surprisingly, **it cost nothing extra to build:** four recent library construction projects in Berkeley, all about the same size, averaged \$586/sf in cost—the West Berkeley Branch came in at \$585! Signaling a new trend, innovative designers and builders are now finding ways to build ZNE structures for the prevailing cost of construction for like buildings in a given locale.



Savings by Design Subprogram

The SBD subprogram serves the commercial new construction segment. It promotes integrated design by providing owner incentives, design team incentives, and design assistance to participants who design spaces that save 10 percent more energy compared to Title 24 standards.

Customized New Construction (CNC) serves the commercial new construction segment for projects requiring more customized calculations. As a general rule of thumb, CNC serves spaces that fall under an industry standard practice baseline, rather than Title 24 (data centers, for example). CNC is a subset of the Commercial Calculated subprogram, but as a new construction offering, it is mentioned here for completeness.

2014 Strategies and Successes

SBD coordinated with a number of internal and external stakeholders to ease the transition over to the new iteration of Title 24 on July 1. A number of code transition resources were developed and posted to energydesignresources.com, SBD's educational offering. Documents and tool updates were initiated in anticipation of the code to facilitate a more seamless transition. The statewide SBD team collaborated closely to work through challenging issues related to new Title 24 standards.

In 2014, PG&E incorporated some alternative baselines into modeling software, which will both greatly simplify customer participation and significantly decrease review time. In addition, PG&E continued to post design briefs, newsletters, and tools to energydesignresources.com, to help the marketplace adjust to the new code cycle.

Commercial Deemed Incentives Subprogram

The Commercial Deemed Incentives (Deemed) subprogram offers prescriptive rebates direct to customers, vendors or distributors for the installation or sale of energy efficient equipment. The Commercial Deemed subprogram offers a broad array of measures across technology families including lighting, HVAC, food service, refrigeration, water heaters and more.

2014 Strategies and Successes

In 2014, PG&E marketed the Deemed subprogram through three primary delivery channels: (1) PG&E account representatives discussing rebate offers with customers; (2) trade professionals integrating PG&E rebates into their business models; and (3) distributors stocking and selling efficient equipment at reduced cost, thanks to PG&E rebates.

The program launched new prescriptive rebates for LED High Bay fixtures, LED Exterior fixtures, and HVAC Demand Control Ventilation measures, thus refreshing its product portfolio with new, innovative offerings. In addition, the program sunset several measures, including many lighting control technologies and refrigeration strip curtains, that the program had supported through the technology lifecycle and that are now required by Title 24 code or are industry standard practice.

PG&E continued to focus attention on new and innovative offerings for its commercial customers. Between 2013 and 2014, kWh savings from LEDs in the Commercial Deemed program increased significantly while Linear Fluorescent volume decreased by more than percent, exemplifying the program's shift to supporting newer technology. The increase was driven by a successful expansion into the midstream/distributor channel, which saw volume increase 67 percent year over year.



As discussed above, PG&E implemented the “deemed must go deemed” rule, which requires that measures eligible for a deemed rebate must use the deemed channel and do not qualify for customized incentives. This rule eliminates “cherry-picking” for higher incentives and/or savings values and improves cost-effectiveness by driving addition project volume into the lower cost deemed channel.

Commercial Direct Install Subprogram

PG&E’s Direct Install offerings are administered through PG&E’s Third Party and Government and Community Partnership programs. These programs provide small business customers with the opportunity to have a third party contractor retrofit existing systems with energy efficient systems at low or no cost to the customer. Given that many small business customers have short-term leases and a split-incentive barrier (where the customer or owner do not own the equipment that they pay bills for), this program is an effective way to address the needs of this sector and overcome the barriers of limited capital, lack of expertise, and understanding of EE benefits. For more information about PG&E’s 2014 successes in Direct Install, please see Third Party and Government and Community Partnership programs sections.

PG&E Leverages Sustainability Circles to Drive Success of its Commercial Continuous Energy Improvement Program

PG&E’s CEI Program completed a second Sustainability Circle in October 2014.

This Circle was made up of 9 commercial businesses in Pleasanton, California and the city of Pleasanton.

Each entity presented their sustainability plans which included **162 initiatives** for energy and waste reduction, improved water usage, and improvements to use of natural resources and materials in the operation of their businesses, with **a projected annual savings of \$2.2 million; CO₂ reduction of 2,800 metric tons, 4,069,000 kWh of energy and; 51.1 million gallons of water.**

Continuous Energy Improvement Subprogram

The Continuous Energy Improvement (CEI) subprogram is a consultative service which targets long-term and strategic energy planning. CEI is designed to reintroduce the importance of energy management by transforming the market and to help reduce energy intensity through a comprehensive energy management approach. CEI addresses technical and management opportunities for Commercial, Industrial and Agricultural customers while creating sustainable practices through a high-level energy commitment from executive and board-level management.

Strategies and Successes

2014 witnessed the deployment of a cohort model implementation approach for five large commercial customers, including energy planning workshops and model development.

Commercial Energy Advisor Subprogram

The Commercial Energy Advisor subprogram offers a suite of products and services to support customer education and participation in EE, DR and self-generation opportunities, as well as to promote awareness of GHG and water conservation activities. The program utilizes proactive outreach initiatives and data driven interactive tools designed to engage and motivate customers to reduce their energy consumption through personalized program recommendations.



2014 Strategies and Successes

In 2014, the program leveraged new technology platforms to make providing IDSM education easier, greatly increasing our ability to scale on-site integrated audit services for our customers.

As part of the Energy Insight platform build out, PG&E updated its on-site energy audit tools into Energy Insight. In addition, PG&E continued expansion of the Universal Audit Tools based on customer feedback for simpler data entry, more regular product updates and more customer relevant content.

Building benchmarking assistance remained a focus and PG&E facilitated trainings and automated data exchange to help customers better understand their energy usage. To support the identification and prioritization of EE opportunities, PG&E offered on-site and remote energy audits, including integrated audits that combine EE recommendations with DR and DG information.

Commercial HVAC Subprogram

The Commercial HVAC subprogram delivers a comprehensive set of midstream, and upstream strategies that builds on existing program, education, and marketing efforts and leverages relationships within the HVAC industry to transform the market towards a sustainable, quality driven market.

Strategies and Successes

Market transformation, direct energy savings and demand reductions are achieved through these three subprogram elements that make up a comprehensive program approach: Upstream HVAC Equipment Incentive, Commercial Quality Installation and Commercial Quality Maintenance (C-QM).

Upstream HVAC Equipment

This initiative offers incentives to distributors who sell qualifying high-efficiency commercial HVAC equipment to increase the stocking and promotion of such equipment.

2014 Strategies and Successes

- Promote program distributors to those that currently participate and those who have limited or no participation.
- Evaluate new technologies and associated equipment categories such as those with higher tiers for packaged equipment in order to claim greater savings and to move the market to higher efficiency units.
- Use metrics to benchmark distributor performance relative to their peers in order to create a sense of competitiveness.

Commercial Quality Installation

This offering addresses commercial installation practices to ensure that HVAC equipment is installed and commissioned per industry

PG&E Acts as a Leading Voice in Evolving and Implementing Transformative HVAC Programs

As Program Administrators and active participants on the Council of Advisors and the Executive Committee (EC) of the Western HVAC Performance Alliance (WHPA), PG&E’s Residential and Commercial EE experts are working collaboratively with a broad group of HVAC and EE professionals, facility and property management organizations, researchers, educators, utilities, and regulatory agencies to champion HVAC policies to curb energy waste throughout California and the Western region. The WHPA is currently working on updates to the Strategic Plan to ensure more comprehensive integration of IDSM strategies and AB 758 objectives.



standards.

2014 Strategies and Successes

- Commercial HVAC Quality Installation Contractor Education and Customer Awareness programs are based on Air-Conditioning Contractors of America (ACCA) standards.
- ACCA staff and other industry stakeholders in the WHPA collaborated to validate the market transformation groundwork being laid and ensure that quality installation standards can be verified in the field in a sustainable fashion for Commercial HVAC.

Commercial Quality Maintenance

C-QM focuses on commercial maintenance practices to ensure that equipment is serviced per industry standards. Further, it seeks to transform the Commercial HVAC maintenance from a commodity-based to a quality-based industry.

2014 Strategies and Successes

- Provided incentives for system assessment, system optimization and continued rooftop unit maintenance based on American National Standards Institute, American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) and ACCA Standard 180.
- Conducted multiple training sessions for commercial contractors on Advanced Diagnostics and other quality maintenance practices to ensure that participating contractors and technicians have the skills necessary to assess, maintain, and optimize systems per industry standards.
- Supported commercial contractors with marketing materials and outreach efforts to educate customers on the value of quality maintenance and utilizing licenses and certified technicians.
- Participated in monthly WHPA subcommittee meetings, discussing input and feedback regarding improvement to the C-QM Program.
- Simplified the data gathering process for contractors on the rooftop through improvements to the program Information Technology (IT) infrastructure.
- Implemented CPUC direction to disaggregate the generalized measure code structure into individual treatment-based measure codes, allowing more granular, site-specific savings estimates.
- Redesigned contractor technician training in response to Work Order 32 (EM&V evaluation from CPUC) comments.
- Added several add-on measures including Enhanced Ventilation Controls, Demand Control Ventilation and Notch V-Belt to create additional savings in addition to the original EE treatment.
- Brought in 2,006 new units into program.

Industrial Program

California’s industrial sector is extremely diverse, and in most cases are heavy energy users. Throughout 2014, PG&E focused on EE solutions for its industrial sector customer base to help reduce energy consumption and GHG emissions, and increase customers’ profitability by lowering energy costs. The 2014 Statewide Industrial Energy Efficiency Program partnered with industry stakeholders to promote integrated energy management solutions to end-use customers. The program offerings together were designed to not only overcome the traditional market barriers to EE, but also use efficiency to advance IDSM opportunities such as demand reduction and DG. Leveraging a full suite of energy-efficient tools, PG&E’s statewide Industrial programs work to accelerate the adoption of EE measures. Key offerings included rebates and incentives for efficient equipment and systems, technical support such as facility audits and energy savings analysis, zero interest project financing, and strategic energy planning.

PG&E’s Industrial Sector Quick Facts

- **30,000+** customers; **500+** large
- In 2014, PG&E supported and processed **411 EE projects** for industrial customers of all sizes.

These programs targeted and successfully completed projects in various facilities including oil production, printing plants, plastic injection molding, component fabrication, lumber and paper mills, cement and quarries, metals processing, petroleum refineries, chemical industries, assembly plants, and water and wastewater treatment plants.

PG&E marketed and delivered these offerings through a number of channels, including advertising in industry publications, presence at industry events, support for education and research activities, and close partnerships with engineering and installation firms. PG&E’s portfolio of offerings also includes specialized Third Party programs focused on specific technologies, segments, or approaches with specialized requirements. These Third Party programs bring deep knowledge of California’s industrial sector. These programs are described in more detail in the Third Party programs section.

Strategies and Successes

Industrial customers are sophisticated in their understanding of energy usage within their facilities. While these customers understand and appreciate EE, decisions to upgrade to energy efficient equipment must be balanced with minimizing operational and production risks.

PG&E works closely with customers to understand their business needs so that programs are carefully designed, and offerings align with customers’ requirements with minimal risk. PG&E depends on a team of EE experts including account representatives, field engineers, contractors, and Third Party implementers with deep technical knowledge and understanding of the industrial sector to offer industrial customers the right EE solution at the right time—from EE audits to scope EE projects via its Energy Advisor Program, to financial



The oil sector represents an energy-intensive industry. These customers rely on the full suite of PG&E energy efficiency offerings to identify and implement viable projects.



offerings to install EE projects through its calculated and deemed customer incentive programs or its OBF Program.

Engagement strategies depend on the size and type of industrial customers. PG&E's dedicated account representatives serve as trusted energy advisors and work closely with customers to understand the customer's EE requirements, budget availability and timing.

In 2014, PG&E supported and processed 411 Industrial projects. PG&E's Industrial programs helped customers save over 8.3 MW, close to 63 GWh, and more than 7MMth. The majority of the gas savings is attributed to oil production and refining projects, while electric savings are mostly credited to refrigeration and compressed air projects. The various cost savings and increased safety associated with reduced maintenance of higher efficient equipment was a successful method of championing EE projects within all industrial sectors.

Implementation Challenges

The industrial segment has several common implementation challenges. New technologies are slow to evolve, and are cautiously adopted. Since many industrial customers operate their facilities 24/7, minimizing disruption in their production processes is of paramount importance. The capital costs associated with many EE projects also represent significant challenges to industrial customers. In PG&E's territory, the oil sector and municipal wastewater treatment represent a large portion of energy savings opportunities but are the most affected by these challenges.

Throughout 2014, the rate of new oil sector EE projects has decreased as many measures are now considered Industry Standard Practice (ISP). In addition, the reduction of crude oil price per barrel has slowed production and limited the type of projects in which oil producers are willing to invest.

Municipal wastewater facilities are ripe with EE opportunities, but are also challenged to ensure EE implementation has minimal or zero disruption to the services they provide. Historically, equipment upgrades that are not included in the capital budgeting process have had difficulty securing financing.

PG&E is well prepared to handle these challenges by continuously looking for ways to offer new technologies and financing opportunities, and improved education and training initiatives. For example, PG&E account representatives are educating the municipalities on leveraging financial programs such as PG&E's OBF Program to overcome the capital cost hurdle.

Opportunities Moving Forward

PG&E will place increased focus on proactively developing baseline and ISP research studies for various processes, operations and technologies. In addition, PG&E plans to explore additional RCx opportunities for the industrial sector, focused on process controls. Exploration of new technologies will play an important role in PG&E's Industrial Program. For example, PG&E is interested in evaluating new oil-field technologies such MotorWise and Solar Jack. Additionally, PG&E will continue to work on development of deemed rebates for industrial customers such as variable frequency drives (VFD) for <25 HP Compressed air systems and process fans to replace high pressure compressed air systems. Process fans provide the delivery of needed air volumes at much lower pressures and in turn, lower energy, and also avoid high demand consumption, which typically occurs when compressors are on.

Statewide Industrial Subprograms

Industrial Calculated Incentives Subprogram

The Industrial Calculated Incentives subprogram provides customized incentives for non-residential EE retrofit and new construction projects involving the installation of high-efficiency equipment or systems. Incentives are paid on the energy savings and permanent peak demand reduction above and beyond baseline energy performance, which include state and federal-mandated codes, ISP, or other baseline energy performance standards. Focus areas for the 2014 program included process and non-process loads at various industrial facilities that reduced energy usage associated with boilers and refrigeration equipment, high bay and outdoor lighting measures. Significant savings were also achieved by reducing energy usage associated with oil production.

2014 Strategies and Successes

As part of its Industrial Calculated Incentives subprogram, PG&E focused on direct engagement of customers leveraging its team of experienced, local, and dedicated account representatives and field engineers via local workshops, trade shows and industry events, and partnerships with industry associations and equipment vendors. PG&E used portfolio data analytics to improve pipeline visibility, target high-potential customers and industry segments, and inform new program development. PG&E will continue to leverage its data resources to better understand and target high-energy use customers. Finally, PG&E instituted process improvement initiatives for project reviews, including application of consistent baselines, measure costs, and ISP determinations across projects. These process improvement initiatives stemmed from lessons learned and best practices identified in the CPUC 2010-2012 custom impact evaluation and the ex ante review process.

Deemed Incentives Subprogram

The Industrial Deemed Incentives subprogram provides rebates for the installation of new EE equipment and measures. Deemed retrofit measures have fixed incentive amounts per unit/measure and are intended for projects that have well-defined energy and demand savings. In many cases, projects are identified through utility EE audits, customer communications with PG&E account representatives, or partnerships with equipment vendors and trade allies.

2014 Strategies and Successes

PG&E recognized an opportunity to better leverage its trade allies network to help educate industrial customers on, and install, lighting, boiler/steam, and refrigeration products. In addition, PG&E supported the deployment of several Emerging Technologies projects in partnership with universities to inform new measure development.

For example, PG&E supported UC Davis' Center for Water-Energy Efficiency to develop an embedded energy disaggregation model that could enable the capturing of embedded energy in projects that had water savings. As the



Aerators treating waste at work: PG&E's team of industrial energy efficiency experts continuously look for ways to further municipal wastewater facilities' energy efficiency opportunities.

Water/Energy Nexus proceeding (R.13-12-001) evolves, PG&E may leverage findings to incorporate into the cost-effectiveness studies.

PG&E also supported the California Polytechnic State University’s (Cal Poly) Irrigation Technology Research Institute to develop a water agency audit model. The audit model was a tool for field engineers and account representatives to identify and scope opportunities within water agency facilities. PG&E plans to integrate the model into its Energy Advisor audit tool set following findings from the wastewater treatment baseline study, set for completion in 2015.

Continuous Energy Improvement Subprogram

The Industrial CEI subprogram is a consultative service which targets long-term and strategic energy planning. CEI is designed to reintroduce the importance of energy management through a comprehensive energy management approach involving identification and tracking of energy productivity metrics, identifying stakeholders for the company’s energy and associated financial impacts, planning for capital projects, and sharing of best practices within the organization and amongst cohorts of peers. CEI addresses technical and management opportunities for industrial customers while creating sustainable practices through a high-level energy commitment from executive and board-level management.

2014 Strategies and Successes

In 2014, PG&E deployed a cohort model implementation approach for five food processing customers, including energy planning workshops and model development. The idea behind the cohort model is to help customers increase their return on energy-related investments, and assist them in identifying and implementing EE-related initiatives that persist. Importantly for industrial customers, the cohort model represents an opportunity to share success stories and lessons learned to help boost productivity and overall business performance. To further the CEI cohort strategies, PG&E worked with a consulting firm to develop curriculum and training materials specifically targeting decision makers and facility managers in the manufacturing sector to provide them the knowledge to make long term energy management choices.

Industrial Energy Advisor Subprogram

The Industrial Energy Advisor subprogram provides customer education and encourages participation in EE, DR, self-generation programs and promotes awareness of GHG and water conservation activities. The program works to assist customers in the implementation of the appropriate solutions for their business while placing an emphasis on deep energy savings opportunities and continuous improvement over time. Aligning integrated improvement opportunities with customers’ needs, the Energy Advisor Program helps customers appreciate EE benefits therefore increasing program participation and adoption rates.

Serving Our Customers:

PG&E’s industrial customers benefit from local, regional, and niche program offerings delivered through its Third Party Program channel.

PG&E leverages its industrial Third Party programs to address niche markets, test new and innovative measures, program strategies and design, and provide turn-key/concierge services which help to meet customer needs, and identify and target hard-to-reach or stranded potential. In 2014, Third Party programs specifically targeting oil fields, refineries, heavy industry, and food processors **completed over 175 efficiency projects** contributing 79% of segment electric energy savings achievements and 69% of segment gas energy saving achievements. *Additional details may be found in the Third Party programs section of this report.*





2014 Strategies and Successes

2014 saw the continued expansion and improvement of the Universal Audit Tools based on customer feedback to encourage greater customer adoption. PG&E continued to offer on-site and remote energy audits, including integrated audits that combine EE recommendations with DR and DG information. In addition, PG&E focused attention on close coordination with large end-use customers to understand project scope and timeframe constraints to better influence customer selection of state-of-the-art EE and demand management solutions.

Agricultural Program

In 2014, the Statewide Agricultural Energy Efficiency programs provided a portfolio of offerings to support an industry heavily impacted by unprecedented statewide drought conditions. The Agricultural programs, coupled with DR and DG programs, helped agricultural producers and processors manage energy costs and make informed investments in new equipment.

Through four agricultural-focused subprograms, the statewide team offered a full suite of tools to position California agricultural customers to eliminate unnecessary energy use. Key offerings included rebates and incentives for efficient equipment and systems, technical support such as facility audits and energy savings analysis, zero interest project financing, and strategic energy planning.

Programs in 2014 targeted the agricultural and food processing sectors, including agricultural growers (field crops, fruits and nut trees, vegetables and vineyards), greenhouses, post-harvest processors, dairies, irrigation districts/agencies, fruit and vegetable processors (canners, dryers and freezers), prepared food manufacturers, wineries and other beverage manufacturers.

PG&E marketed and delivered these offerings through a number of channels, including advertising in industry publications, presence at industry events, support for education and research activities, and close partnerships with engineering and installation firms. PG&E complements its statewide EE offerings and offers concierge EE solutions through its Third Party programs focused on specific technologies, segments, or approaches with specialized requirements. These programs are described in more detail in the Third Party section.

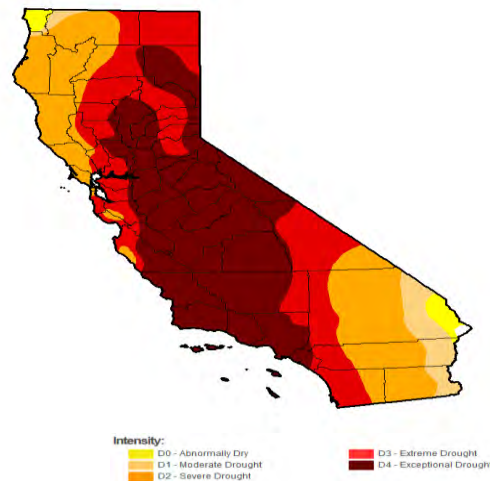
Key Initiatives: Drought Support for the Agricultural Community

California is in the midst of an historic drought that has significantly impacted the ways in which PG&E’s agricultural customers do business. As such, throughout much of 2014, PG&E focused on several key initiatives to help agricultural customers save energy and better manage their usage, prioritizing efforts to assist drought-impacted customers through existing programs and channels. For example, PG&E developed simplified incentive offerings for irrigation VFDs through the Agricultural Deemed subprogram and supported its launch with a marketing campaign. In addition, PG&E allocated additional funding for pump efficiency tests to respond to increased demand and support increased savings from pump overhaul projects. What’s more, PG&E scaled up the Low Pressure Irrigation Direct Install Third Party Program to assist small and medium growers transition away from high pressure sprinkler systems. PG&E also provided assessment and development support for behavioral and informational products, which leverage new data sources and tools to help

PG&E’s Agricultural Sector Quick Facts

- **30,000+** customers; **3,000+** large
- In 2014, PG&E supported **959 agricultural customers** with **\$10.1 million in incentives** for projects that will continue to **save customers an estimated \$11 million per year** in energy bills.

Throughout 2014, PG&E Scaled Up its EE Programs to Assist Drought-Affected Customers Save Water and Energy



Source: United States Drought Monitor (March 2015)

agricultural customers manage energy use. One such initiative included an evaluation of soil moisture sensor systems and automated pump monitor software, through our ETP.

2014 Strategies and Successes

- **Local presence in agricultural communities.** PG&E focused on building trust with customers in their own communities by providing information about efficient irrigation equipment and operations via trusted trade professionals, scheduling workshops with partners such as local farm bureaus, and collaborating with agricultural universities such as California State University, Fresno.
- **Water/energy nexus.** The agricultural industry is a central stakeholder in California’s water/energy nexus, with a footprint of nearly 80 percent of California’s water usage, over 10 billion kWhs of annual energy use statewide, and \$45 billion of direct economic impact. Using existing and new programs, PG&E continues to prioritize approaches to jointly improve water and energy management for growers and manufacturers.
- **Evolving program offerings.** PG&E prioritized development of new agricultural rebate products (including well pump variable frequency drives and ≤25 HP pump overhauls). PG&E also responded to changes in the market by winding down its popular sprinkler nozzles and sprinkler to drip irrigation conversion incentives for tree and vineyard crops.

In 2014, \$10.1 million of PG&E incentives supported investments by 959 agricultural customers in projects that will continue to save customers an estimated \$11 million per year in energy bills. These savings come from a wide range of statewide coordinated and local and regional program offerings through PG&E’s host of Third Party agricultural-focused programs.

Implementation Challenges

For energy-intensive process equipment (including pumps and mechanized processing facilities), equipment decisions must be made in the context of minimizing risk of interruption to production output or quality. PG&E works closely with customers to understand their business needs so that programs are carefully designed, and offerings align with customers’ requirements with minimal risks.

Opportunities Moving Forward

The agricultural industry’s energy usage has grown in recent years as surface water supplies have been cut, local water tables have dropped, and businesses have invested in new equipment and capacity to improve production capabilities. Pump and irrigation energy usage requires comprehensive management, technology, and operations approaches in order to achieve reductions. To further agricultural customers’ EE opportunities, PG&E is continuing evaluations of new technology-enabled approaches to water and energy management, including sensing technologies, analysis tools, and process



Almond orchards use significant amounts of water and energy. PG&E offers agricultural customers a wide range of technical and financial assistance associated with pumping to reduce energy use and save water.

automation via partnerships with start-up companies, agricultural universities, and leading growers. Ultimately, these technologies may be a core component of PG&E’s Agricultural Program strategy. In the near term, PG&E will be rolling out additional products to support investments in VFDs for new wells and irrigation systems as well as vertical hollow shaft motors, which operate more efficiently than standard efficiency motors (large horsepower agricultural motors are not regulated by U.S. Department of Energy (DOE) federal motor standards).

Statewide Agricultural Subprograms

Agricultural Calculated Incentives Subprogram

The Agricultural Calculated Incentives subprogram offers incentives for a wide range of energy efficient technologies including steam systems, refrigeration equipment, and lighting technologies. PG&E account managers and engineering experts work closely with customers throughout the design and installation process to evaluate, and help customers implement, the most energy efficient technologies. Customized projects were carefully tracked from audits through project completion, with PG&E EE experts involved at each step of the way.

2014 Strategies and Successes

- The Statewide Agricultural Calculated Incentives Program provided incentives for 122 completed projects, with incentives ranging from less than \$2,000 to nearly \$450,000.
- Following the geographical concentration of California’s agricultural industry, projects were concentrated in the Central Valley, with nearly 75 percent of savings coming from the region stretching from Stockton to Bakersfield.

Agricultural Deemed Incentives Subprogram

The Agricultural Deemed Incentives subprogram provides fixed rebates for high volume measures, such as HVAC, lighting, and irrigation equipment. Projects are typically identified through utility EE audits, customer communications with local PG&E account representatives, or partnerships with equipment vendors and trade allies.

Program information was communicated to a customer base of over 35,000 growers through training events, mass media advertising, and the expertise of PG&E’s dedicated agricultural local account representatives and call center representatives.

2014 Strategies and Successes

PG&E created a new rebate offering for VFD equipment for agricultural irrigation pumps, which helped farmers precisely control pumps in response to operational needs. In 2014, PG&E processed and paid over 125 custom VFD projects with an average incentive of \$5,000. The Deemed Program offers a better use of



Through targeted, local initiatives, PG&E delivers key energy efficiency education and training to help its agricultural customers reduce their energy bills. For example, PG&E provided field demonstrations of a low pressure design for a drip irrigation system.

program administration costs for this high volume measure, while enabling a simpler customer experience.

Through PG&E’s Deemed Incentive Program, 5,500 acres of fruit and nut orchards converted energy-intensive high pressure sprinkler systems to high capital cost low-pressure drip and micro irrigation equipment. In addition to the energy savings achieved by the low-pressure systems, these precisely designed and operated drip irrigation systems are also more water-efficient than high pressure sprinkler systems and contribute to improved crop productivity, enabling farmers to optimize water inputs.

Agricultural Energy Advisor Subprogram

In addition to a range of on-site and online energy audit offerings, the Agricultural Energy Advisor subprogram provides pump efficiency services, known as the APEP, which offers pump tests and incentives for pump efficiency improvements to agricultural, municipal, and irrigation district customers.

2014 Strategies and Successes

To assist businesses and governments critically affected by the statewide drought, PG&E allocated additional funding for pump efficiency tests and increased incentive rates for pump efficiency improvement projects. These changes were communicated through training events, mass media advertising, and PG&E’s ongoing partnership with California State University, Fresno’s Center for Irrigation Technology.

By increasing funding for pump efficiency tests, and increasing project incentives, PG&E increased energy savings claimed by 45 percent compared to 2013. Through APEP, 129 agricultural producers received incentives for 170 pump efficiency projects. Water agencies and irrigation districts contributed the remaining 35 percent of calculated savings as verified by pre-project and post-project pump efficiency tests. What’s more, PG&E met its 2014 goal to increase program participation from Central Coast growers.



PG&E targeted agricultural customers with high energy and water usage through a variety of print and media channels.





Agricultural Continuous Energy Improvement Subprogram

The Agricultural CEI subprogram builds on the structure of the proven ENERGY STAR® energy management model. CEI is a consultative service which targets long-term and strategic energy planning, including development of energy stakeholder groups within organizations, identification and tracking of energy productivity metrics, planning for capital projects, and sharing of best practices within the organization and amongst cohorts of peers. CEI incorporates company-wide assessment, maps energy goals to business objectives, ensures continual evaluation and iteration and activates employee participation.

2014 Strategies and Successes

The 2014 program focused on the food processing segment, where rigid production schedules, highly specialized equipment, and highly variable operations make even basic energy management a challenge. To track energy intensity over time, facility energy consumption was analyzed in the context of production levels. Program participants benefitted from sharing best practices and challenges in a cohort of peers from other participating companies within their industry.

Five food processing customers worked within the CEI framework to move toward the goal of a comprehensive, self-sustaining corporate energy management program. All participating customers completed all set-up and planning tasks, and are currently performing against their energy management strategies.

Serving Our Customers:

Local and regional Third Party Programs allow PG&E to offer its Agricultural customers targeted solutions that perfectly align with their business needs

Third Party programs are a critical component of PG&E's portfolio of offerings targeting the agricultural segment.

In 2014, Third Party programs targeting dairies, wineries, and small agricultural producers **completed over 200 efficiency projects**. Additional details may be found in the Third Party Programs section of this report.



Lighting Program

The Statewide Lighting Program facilitates market transformation for advanced lighting products through a number of activities including: (1) assessment of pre-commercialized lighting technologies; (2) demonstration projects for advanced lighting technologies in the early stages of commercialization; and (3) incentives for cost-effective lighting measures that have reached a greater level of commercialization.

Key Initiatives

In 2014, a significant accomplishment of the Statewide Lighting Program was its contribution to transforming the advanced LED market for residential lighting products. Following the adoption of the California Energy Commission’s (CEC) Voluntary Specification for advanced LEDs, and coupled with a CPUC mandate for the IOUs to only incentivize lamps meeting this specification, the Statewide Primary Lighting upstream programs worked with manufacturers and retailers to spur development of advanced LEDs that met the specification, increasing the number of eligible products from one model in December 2013 to nearly 50 models by the end of 2014.

PG&E conducted market research to understand how to most effectively market and promote Advanced LEDs, conveying their most compelling features and benefits. In Q4 2014, PG&E launched its creative campaign concept “The Right Light for Living” as well as an “advanced LED” label identifying advanced LED products across major LED manufacturers such as Cree, Inc., and Feit, providing attribution to PG&E and reinforcing the instant rebate at retailers such as Home Depot and Costco.

PG&E successfully completed an LED Distributor Program trial through its Lighting Innovation subprogram, proving that the midstream channel was a viable one for LED screw-in replacement lamps. These lamps were transitioned to the Commercial Deemed Program in 2015.

Strategies and Successes

The Statewide Lighting Program focused solely on advanced lighting in 2014, and PG&E spent approximately 65 percent of its Primary Lighting incentive funding on advanced LEDs.

Through the Lighting Innovation subprogram, the midstream channel proved a successful delivery channel for LED screw-in replacement lamps, contributing 14.54 GWh of electric savings and 3.2 MW of peak demand reduction.

PG&E’s Lighting Program Quick Facts

- The Lighting Program contributed **17%** of the overall 2014 EE portfolio GWh savings and **13%** of the EE portfolio MW peak demand reductions.
- The Lighting Innovation subprogram successfully tested the midstream delivery channel for LED screw-in replacement lamps and increased the number of active distributors by **80%**.



PG&E developed creative marketing campaigns like **The Right Light for Living** and **Advanced LED** to effectively reach customers.



The Strategic Plan's Lighting Action Plan (LAP) is the backdrop for discussions on how the utilities can help overcome barriers and increase adoption of energy efficient technologies, systems, and best practices to help reach California's 60-80 percent energy savings goal. The Lighting Market Transformation (LMT) Program is an element of the California IOUs' efforts to actualize the goals contained within the LAP. In 2014, as one of the "champions" for Strategy 6 of the LAP to "determine the most effective messaging for different end-user groups," PG&E completed two phases of Residential Customer Market Research to understand how to most effectively market and promote Advanced LEDs, conveying their most compelling features and benefits. At the end of 2014, Cree, Inc., launched an end cap display with the Advanced LED Emblem, the first time this was used at Home Depot stores throughout PG&E's territory.

Opportunities Moving Forward

Building on 2014 program successes, PG&E will continue to encourage and promote advanced LEDs in the market. In addition, the PG&E Lighting team is exploring ways to expand advanced LED products to other retail channels outside of big box retail such as hardware stores and independent markets. To reinforce support for the most efficacious and innovative products, and to improve the cost effectiveness of its lighting offerings through updating incremental measure costs used in LED workpapers, PG&E is investigating alternative calculation methods working collaboratively with the statewide team and Commission staff.

PG&E's Lighting Program Focuses on Opportunities to Best Transform Markets and Continuously Innovate

Using the latest input from the Lighting Market Transformation subprogram's Lighting Solutions Workbook, **PG&E is developing roadmaps for future solutions** appropriate for Lighting Innovation trials and Emerging Technologies projects. In addition, PG&E plans to conduct Lighting Innovation trials on an Advanced Lighting Control System Calculation Tool and a Lighting Design Assistance Program concept.

Statewide Lighting Subprograms

Primary Lighting Subprogram

The Primary Lighting subprogram offers upstream rebates to reduce the cost of energy efficient lighting products, introduces new energy efficient lighting products, and strives to influence the future purchasing and installation behaviors of residential customers. An array of product types, models, and technologies are offered, including specialty CFLs and LEDs.

2014 Strategies and Successes

2014 marked the first full year of solely supporting LED lamps that met the new advanced LED specification as designed by the CEC. The program saw an exponential increase in product availability from the prior year.

The number of qualified LED lamp models went from 1 to 50 in less than a year due to the rigorous outreach to manufacturers and engaging them in the testing/qualification process early on.

PG&E employed an intentional measure blend to clearly signal its view that the market is ready for LEDs while including limited advanced CFLs to balance cost effectiveness and achieving energy savings targets.



Through a strong partnership with Feit and Costco, as well as Cree, Inc., and Home Depot, PG&E incented nearly one million advanced LEDs through its Primary Lighting subprogram in 2014.

Lighting Innovation Subprogram

The Lighting Innovation subprogram evaluates advanced lighting products or program approaches new to the market, which have potential to eventually enter the Primary Lighting residential upstream program or the Commercial, Industrial and Agricultural programs. Trials and studies are administered to determine recommendations, showcases and field placement projects are conducted when applicable.

2014 Strategies and Successes

PG&E focused on building a robust commercial midstream channel for plug and play products like LED replacement lamps and LED refrigerated case lighting products. Also, with the onset of 2013 Title 24 building codes taking effect on July 1, 2014, PG&E implemented a short trial to assess opportunities for quickly priming the market on the use of dimming ballasts and controls with existing fluorescent bulbs and explored a possible engagement approach with the California Advanced Lighting Controls Training Program.

What's more, thanks to PG&E's strong relationship with distributors and other industry partners, it increased the number of active distributors participating in the LED midstream program from 42 to 76 and tripled the incentive spend in one year. This represents a great success, positioning California one step closer to transforming the market.

Lighting Market Transformation Subprogram

The LMT subprogram develops innovative data-driven program strategies to adapt utility lighting programs to the ever-changing energy and lighting markets to support the Strategic Plan. The program tracks, coordinates, and provides collaboration opportunities for utility, government, and industry LMT activities. The program oversees the progression of lighting solutions across utility programs, such as ETP, Lighting Innovation, Primary Lighting, and C&S. These programs help ensure efficient progression of lighting solutions into and out of customer EE programs.

2014 Strategies and Successes

The Lighting Solutions Workbook (LSW) was updated to better characterize the market and savings potential for market transformation planning activities. Market Transformation Indicators were developed to track changes in the California lighting market over time. Residential Market Indicators were retail pricing, share of retail sales, and retail shelf stocking by technology. Nonresidential Market Indicators identified in the LSW were program participation and nonresidential interior installed lighting saturation. Highlights of the workbook update include: updated data sources, the addition of lighting controls, and incorporation of C&S requirements. PG&E updated the LSW to help inform future lighting offerings.

PG&E played an active role in 2014 in setting current and future direction of the lighting industry nationally by participating in several state and national committees in the lighting industry such as the DesignLights Consortium, Consortium for Energy Efficiency, and ENERGY STAR®. PG&E actively coordinated with the West Coast Utility Lighting Team to share information about various lighting projects and activities. More details regarding the Statewide LMT subprogram efforts will be provided in the June 1, 2015 LMT Annual Report.



Codes and Standards

The Statewide C&S Program saves energy on behalf of ratepayers by influencing standards and code-setting bodies, such as the CEC and the DOE, to strengthen EE regulations by improving compliance with existing C&S, assisting local governments to develop ordinances that exceed statewide minimum requirements, and coordinating with other programs and entities to support the State's ambitious policy goals. C&S Program advocacy and compliance improvement activities extend to virtually all buildings and potentially all appliances sold in California.

Key Initiatives

Throughout 2014, PG&E continued its successful development of Title 24 Codes and Standards Enhancement (CASE) studies, including code enhancement proposals and stakeholder development, in support of 2016 building codes.

In addition, PG&E focused on updates to Title 20 CASE studies in support of Phase 1 rulemaking, and response to all federal appliance standards rulemakings that impact California.

The C&S Program team continued compliance improvement education and training for building codes, and expansion into appliance standards.

Strategies and Successes

Support for state and federal building codes and appliances standards continues to move California towards residential ZNE by 2020, non-residential ZNE by 2030, and the Governor's goal to reduce building energy usage by 50 percent.

Compliance improvement activities have contributed to Title 24 compliance rates that exceed 100 percent, and compliance rates for appliance standards between 80 percent and 90 percent.

Building efficiency and appliance standard advocacy efforts, and higher than expected compliance rates, have resulted in a significant energy savings attributable to the C&S Program. Net C&S savings are approximately half of total net portfolio savings.

Implementation Challenges

The 2013 Title 24 Code, which became effective on July 1, 2014, has been difficult to implement due to late availability of software, software glitches and subsequent software updates. In addition, the 2013 version had one of the largest increases in stringency of any previous code cycle. What's more, Title 24 Code complexity necessitates many additional work aids such as fact and trigger sheets⁹ to explain code intricacies to users.

Codes and Standards Quick Facts

- Compliance improvement activities have contributed to Title-24 compliance rates that exceed **100%**, and compliance rates for appliance standards between **80%** and **90%**.
- Laid the groundwork to put California within striking distance of **Zero Net Energy** with significant proposals for 2016 residential building codes including improvements to attics, walls, lighting and water heating that will lead into further improvements in 2019.

⁹ A trigger sheet is a reference document that indicates the retrofits that require a building permit.



Opportunities Moving Forward

There are several opportunities to improve the quality of advocacy in support of state and federal building codes and appliance standards through increased primary research.

In addition to further expansion of Title 24 education and training, significant energy savings may be achieved by expanding support for appliance standards.

New reach codes may be developed as software stabilizes, and new kinds of reach codes may be considered to improve efficiency of existing buildings.

Statewide Codes and Standards Subprograms

Appliance Standards Advocacy Subprogram

The Appliance Standards Advocacy subprogram targets both state and federal standards and test methods: improvements to Title 20 Appliance Efficiency Regulations by the CEC, and improvements to Federal appliance regulations and specifications by the DOE, EPA ENERGY STAR®, and the Federal Trade Commission. Advocacy activities include developing Title 20 code enhancement proposals, participating in the CEC public rulemaking process, submitting comment letters based on IOU research and analysis in federal standards proceedings, and participating in direct negotiations with industry. Additionally, the program monitors state and federal legislation and intervenes, as appropriate.

2014 Strategies and Successes

The C&S program advocated for changes to Title 20 Appliance Efficiency Regulations. Activities included the following:

- Participated in several CEC webinars and workshops regarding “Phase 1” topics rulemaking.
- Developed and submitted response to CEC’s invitation to participate, a data request, for 18 products: consumer electronics, lighting and water products, commercial clothes dryers, air filter labeling, spas and pool pumps, motors and heaters.
- Completed laboratory testing for several topics, with results submitted as part of the CASE studies. Additional testing pursued for further support of the rulemaking.
- Developed and submitted 13 Title 20 CASE studies to the CEC.
- Facilitated industry and advocate stakeholder meetings for all topics:
 - Video Displays
 - Game Consoles
 - Computers
 - Set-Top Boxes
 - Dimming Ballasts
 - Small Diameter Directional Lamps
 - LED Lamps
 - Commercial Clothes Dryers
 - Toilets and Urinals
 - Faucets
 - Small Network Equipment
 - Amend Swimming Pool and Spa Standards
 - HVAC Air Filter Labeling

Additionally, C&S advocated for changes to federal appliance standards. Activities included the following:



- Researched and responded to specific issues related to federal rulemaking and specification processes conducted by the DOE, EPA ENERGY STAR®, and the Federal Trade Commission.
- Participated in several stakeholder meetings during rulemakings and specifications process, resulting in 38 rulemaking advocacy letters issued in 2014. The results of these efforts will be determined in future years.
- IOU Advocacy letters issued in previous years influenced rulings on five Federal Measures taking effect as law in 2014: (1) Room Air Conditioners; (2) Residential Refrigerators and Freezers; (3) General Service Fluorescent Lamps; (4) Fluorescent Lamp Ballasts; and (5) Water- and Evaporatively-cooled Computer Air Conditioners and Heat Pumps.
- Participated in DOE’s Appliance Standards and Rulemaking Federal Advisory Committee working groups with DOE, industry, and other stakeholders.

Building Standards Subprogram

The Building Codes Advocacy subprogram primarily targets improvements to Title 24 Building Efficiency Regulations that are periodically updated by the CEC. The subprogram also seeks changes to national building codes that impact California building codes through ASHRAE and other national groups. Advocacy activities include, but are not limited to, development of code enhancement proposals and participation in public rulemaking processes. The program may coordinate with or intervene in ratings organizations that are referenced in Title 24 (e.g., the National Fenestration Rating Council, and the Cool Roof Rating Council). These efforts support the governor’s goal to increase building efficiency by 50 percent.

2014 Strategies and Successes

- Supported post-adoption prerequisites to improve future implementation of 2013 Title 24 building energy and CALGreen standards. Activities included improvements to the Performance Method software and development of a software training program, and edits to the CEC Residential and Nonresidential Title 24 Compliance Manual.
- Conducted efforts to harmonize state and national building codes. Activities included a major rewrite of ASHRAE Standard 189.1 (Standard for the Design of High Performance Green Buildings) to allow a “dual path” approach where one path is able to allow above federal minimum equipment efficiencies without violating federal preemption law. This standard has also adopted bi-level parking lot lighting controls similar to those in the 2013 Title 24 Regulations in alignment with ASHRAE Standard 90.1 (Energy Standard for Buildings Except Low-Rise Residential Buildings). The C&S team has been working with the national energy code development process to assure that daylighting code requirements are aligned between the two standards. In conjunction with Pacific Northwest National Laboratory, the C&S

The C&S Team commenced preparations for the 2016 code cycle to ready itself for expected CEC proceedings

Activities included developing, coordinating, and providing management support for Emerging Technologies projects that are collecting energy savings, cost-effectiveness and feasibility information **for the top four residential measures planned for the 2016 standards**, including improvements to attics, walls, lighting, and water heating.

These measures are critical for achieving **ZNE-ready homes by 2020**.

The Team worked closely with the CEC staff to identify and **prioritize EE measures** for the 2016 Title 24 standards development.

team is involved with the process to require card key controls for lighting and HVAC systems for hotel and motel guest rooms.

Compliance Improvement Subprogram

Following adoption, C&S supports compliance improvement with both Title 24 building codes and Title 20 appliance standards. Compliance improvement activities complement the advocacy work by maximizing verified savings from C&S that are realized and persist over time. The Compliance Improvement subprogram targets market actors throughout the entire compliance chain, providing education, outreach, and technical support and resources to improve compliance with both the building and appliance energy standards. Achieving satisfactory compliance with the codes is a crucial requirement for capturing the code-related energy savings for the long-term benefit of society. Broad compliance is necessary to level the playing field for well-intentioned suppliers and contractors who are otherwise faced with a competitive disadvantage when complying with regulations. Greater compliance strengthens voluntary program baselines and provides a solid foundation for future robust advocacy efforts.

2014 Strategies and Successes

- Expanded training modalities to increase the depth and breadth of educational offerings and audience reach.
 - Decoding Talks: Monthly 90-minute online discussions on specific topics targeted at Building Department Personnel and contractors
 - On-line Learning Portal: Building industry practitioners will have prescribed paths leading to training and tools
 - Virtual Classes: Instructor-led, interactive, web-based classes eliminating travel time and expenses
- Developed and maintained tools to aid compliance improvement practitioners in implementing the code.
 - Forms Ace: Aids in determining which compliance forms are applicable to your specific project
 - Installation Ace: A “field guide” to assist in identifying proper installation techniques and visual aids for some components commonly installed incorrectly
 - Reference Ace: Helps you navigate the Standards using key word search capabilities, hyperlinked tables and related sections
 - Crack the Code Workshops: Workshop packages to help Building Departments facilitate trainings for local installation contractors

The C&S Team Works to Improve Compliance with Title 24 Building Codes and Title 20 Appliance Standards

Key Strategies include:

- Analyzing the compliance supply chain market actors’ unique roles and needs
- Determining how current performance compares to desired performance, reasons for the gap, and appropriate solutions to improve code compliance
- Applying appropriate performance-based solutions that meet stakeholders’ specific needs and preferences





- Launched an outreach campaign to increase consumer and building industry’s awareness of code requirements, and new EnergyCodeAce website designed to serve as a one-stop-shop for compliance tools, resources and learning portal access.
- Created a host of resources, including:
 - Trigger Sheets: Measure-based sheets that identify and define the code requirements that are triggered when a change is made to a building
 - Fact Sheets: Define the essential requirements, considerations and required forms for specific energy code measures
 - Checklists: Provide step-by-step guidance for plans checks and field inspections.
- Developed a new Title 24 Summary Compliance form (NRCC-PRF-01-E) form using input from practitioners and building departments that reduced complexity and provided guidance regarding the forms required to be submitted for a given building project.
- Commenced outreach and education efforts for Title 20 and federal appliance standards.

Reach Codes Subprogram

In addition to mandatory minimum-level codes, the C&S Program advocates for the development and implementation of “Reach Codes” that exceed minimum state code requirements and may be adopted by local jurisdictions or agencies. The Reach Codes subprogram provides technical support to local governments that wish to adopt ordinances that exceed statewide Title 24 minimum EE requirements for new buildings, additions, or alterations. Support for local governments includes research and analysis for establishing performance levels and cost effectiveness relative to Title 24 by Climate Zone, drafting model ordinance templates for regional consistency, and assistance for completing and expediting the application process required for approval by the CEC. The subprogram also supports local governments that seek to establish residential or commercial energy conservation ordinances for existing buildings.

The program also monitors and/or participates in a wide range of activities or proceedings that have direct or indirect impacts on California regulations including, but not limited to ASHRAE, international activities involving Europe, Asia, Canada, and Australia, voluntary standards such as green building codes, and ratings organizations such as the Cool Roof Rating Council, National Fenestration Rating Council, Collaborative for High Performance Schools, and the United States Green Building Council. Additionally, the program intervenes in ENERGY STAR® and other voluntary activities to shape future regulations or support coordination with voluntary programs.

2014 Strategies and Successes

- Commenced efforts to support documenting reach code savings that may be counted towards local government climate action plan goals. Activities included initiating the development of a secure cloud-hosted system that would allow participating Reach Code jurisdictions to import data from the Performance Certificate of Compliance (PERF-1C) XML files. This database will allow the IOUs to report aggregated and detailed modeled energy savings and electric demand and GHG reductions. It will also allow the various jurisdictions access their own aggregated savings and reduction data.
- Initiated preparation of Cost Effectiveness Studies to support the adoption of Cool Roof Reach Code ordinances by the City of Los Angeles, City of Pasadena and County of Los Angeles, respectively. The studies will address product cost, energy savings, cost-



effectiveness and GHG reductions to support reach code requirements for residential and nonresidential Cool Roofs in Climate Zones 6, 8 and 9 (located in the California central coast).

Planning and Coordination Subprogram

The Planning and Coordination subprogram works with the CEC, CPUC, ETP, WE&T, rebate and other voluntary programs, to conduct strategic planning in support of the Strategic Plan policy goals, including ZNE goals for new construction. As part of the expanded outreach and communications efforts, the C&S Program maintains a C&S collaborative, and continues to facilitate the statewide Compliance Improvement Advisory Group. In addition, the C&S Program maintains regular contact with state and federal code-setting agencies to minimize duplication of efforts and coordinate activities.

2014 Strategies and Successes

- Conducted tactical planning in support of the CPUC's residential ZNE policy goal. Activities included development of a draft plan, review by CPUC and CEC staff, and revisions to the draft plan based on these inputs.
- Developed a standing statewide cross-functional conference call to improve coordination communication with other groups within the IOU EE portfolio. Collaborated with the WE&T statewide team on training calendar offerings for building industry community and training for community colleges on 2013 Title 24 code requirements.



Emerging Technologies

The statewide ETP supports the California IOU EE programs in their achievement of aggressive objectives through three subprograms: Technology Assessment, Technology Development Support, and Technology Introduction Support.

Under the statewide ETP, the Technology Assessment subprogram supports the California IOU EE programs by identifying and assessing the performance of emerging EE technologies and solutions in all sectors that may be offered to customers with an incentive. The Technology Development Support subprogram supports efforts to increase technology supply by educating technology developers on technical and programmatic requirements for rebated measures. The Technology Introduction Support subprogram supports efforts to introduce technologies to the market by exposing end-users to applications of emerging technologies in real-world settings, and by using third party projects to deploy technologies on a limited scale in the market.

ETP uses a number of tactics like Lab Testing, Field Testing, Demonstration Showcases or Technology Resource Incubator Outreach (TRIO) to achieve the objectives of its three subprograms. Some of the key tactics are described in sections below, but each tactic may be used to achieve any of the subprogram objectives, and this list is not comprehensive.

Strategies and Successes

The ETP makes it possible for PG&E's EE team to take some qualified risks in terms of testing and benchmarking new and innovative products, services and market solution approaches. This aligns with one of PG&E's EE core values "embracing the art of the possible."

PG&E's Emerging Technologies team actively seeks out new, innovative technologies and approaches, soliciting ideas from internal EE colleagues or external parties. PG&E follows an established and tested internal "solicitation" process that takes into account several strategic and operational lenses when making funding decisions for new projects several times annually. As part of every internal solicitation, an internal taskforce scores each new project idea submitted based on internal and external goals, strategic fit, and market opportunity to name a few, followed by a management review of the taskforce recommended ideas to create the final set of Emerging Technologies projects that will be funded in that solicitation period.

Opportunities Moving Forward

In 2015, PG&E will continue its focus on expanding the pool of new and innovative ideas and solutions that can be offered to our customers. PG&E will place special emphasis on leveraging the increasing availability of good, reliable and cost-effective energy usage data that continues to get more granular. The data can be used to facilitate advanced analytics, targeting and increased customer engagement leading them to make more energy efficient choices as they interact with the grid and their energy environment.

Emerging Technologies Quick Facts

- Through its ETP, PG&E tests and benchmarks new and innovative products, services and market solution approaches - Aligning with one of PG&E's core values "*Embracing the art of the possible*"
- The Emerging Technologies Coordinating Council's "Open Forums" brings together the EE industry top technology developers to pitch products, where they receive live feedback to improve features and capabilities that represent future areas of opportunity for IOU EE programs
- PG&E hosted the 2014 Emerging Technology Summit, where 500+ participants shared perspectives on "*Accelerating Innovation in Energy Efficiency*"

Emerging Technologies Sub programs

Technology Assessments Subprogram

Through the Technology Assessment (TA) element of ETP, energy efficient measures that are new to the market, or underutilized for a given application, are evaluated for performance claims and overall effectiveness in reducing energy consumption and peak demand. A key objective of these assessments is the adoption of new measures into PG&E’s portfolio. Historically, technology assessments have been the core strength of ETP and provide critical support to EE programs. Emerging Technologies assessments may utilize data and information from different sources including: in situ testing (customer or other field sites), laboratory testing, or paper studies may be used to support assessment findings. In addition to other findings and/or information, assessments typically generate some, and on rare occasions all, of the data necessary for EE rebate programs to construct a work paper estimating energy and demand savings over the life of the measure.

2014 Strategies and Successes

As part of the Technology Assessment subprogram, PG&E worked closely with a number of IOU and other industry partners to develop a wide variety of assessments in 2014. For instance, PG&E produced reports describing Technology Assessment results, conclusions, and recommendations. These reports can be accessed via the Emerging Technologies Coordinating Council (ETCC) website at www.ETCC/ca.com, which allows filtering by IOU and published year.

PG&E continued the important work of the ETCC, coordinating assessments and shared technology information through the quarterly meetings. In addition, the statewide ETP team held ETCC Open Forums, where approximately 14 developers of new technologies have an opportunity to highlight their products to ETP. At the Open Forums, ETCC leadership team members provided live feedback to the technology developers on developing or improving features and capabilities that represent future areas of opportunity in EE Program delivery and implementation. Conversations are ongoing with a subset of presenters on further engagement for collaborative ETP projects to test their solutions.

PG&E’s Advances New and Innovative Technologies Through Its Emerging Technologies Program

PG&E successfully completed identification of several technologies such as **advanced lighting controls, advanced HVAC equipment and controls, building and energy management and optimization software, food service technologies** and technologies in other market segments like industrial and agricultural with verified savings and benefits to the CA IOU programs.

Two of those technologies, one specific to **advanced cooling in data centers** and the other related to **advanced indoor LED fixtures and replacement lamps** were transferred into PG&E’s regular portfolio of EE programs.



Technology Introduction Support Subprogram

The Technology Introduction Support subprogram supports the market introduction of new technologies to the market, on a limited scale, through several activities. Scaled Field



Placements (SFP) projects consist of placing a measure at a number of customer sites as a key step to gain market traction and feedback. Typically, these measures have already undergone an assessment or similar evaluation to reduce risk of failure. Monitoring activities on each SFP will be determined as appropriate. Demonstration and Showcase projects are designed to provide key stakeholders the opportunity to “kick the tires” on proven combinations of measures that advance ZNE and other strategic goals. Demonstration showcases introduce measures to stakeholders at a systems level, whether it be the general public or a targeted audience, in real-world settings, thus creating broad public and technical community exposure and increased market knowledge. These potentially large-scale projects expose measures to various stakeholders using real-world applications and installations. Key attributes of a demonstration showcases are that it is open to the stakeholders and highlights a systems approach rather than an individual approach. Market and behavioral studies are designed to perform targeted research on customer behavior, decision making, and market behavior to gain a qualitative and quantitative understanding of customer perceptions, customer acceptance of new measures, and market readiness and potential for new measures. The Technology Resource Innovation Program (TRIP) solicits third party projects, of up to \$300,000, to deploy emerging technologies on a limited scale to the market.

2014 Strategies and Successes

The ETP team scanned, screened, and prioritized a wide variety of sources and coordinated closely with EE programs for measures suitable for Demonstration Showcase projects. For example, there were several residential and commercial ZNE demonstration showcase projects that were successfully completed in 2014. The results of these are posted to the ETCC website at www.ETCC/ca.com. PG&E is actively working to bring the lessons learned from these Demonstration Showcase projects to inform program strategy for commercial and residential new construction.

In addition, PG&E successfully completed other Technology Introduction Support demonstration showcase projects. Two of these projects related to testing the customer engagement and post-retrofit anomaly determination interval meter data analysis tools successfully informed one of PG&E’s most innovative energy efficiency demonstration programs, the Commercial Whole Building Demonstration.

Technology Development Support Subprogram

Technology Development Support (TDS) subprogram provides assistance to private industry in the development or improvement of technologies. Although product development is the domain of private industry, there are opportunities where IOUs are well qualified, and in a strong position, to undertake targeted, cost-effective activities that provide value in support of private industry product development efforts. This support decreases innovator uncertainties and allows the IOU’s via their ETP to have input. The ETP looks for targeted opportunities to support EE product development. Product development is the process of taking an early-stage technology, or concept, and transforming it into a saleable product. ETP uses several activities to support technology developers for example, TRIO roundtables and symposia. TRIO provides support and networking for EE and DR entrepreneurs, investors, and universities with the goal of providing participants the necessary perspective and tools to work with IOUs and ultimately

Engaging Industry Through Technology Resource Incubator Outreach (TRIO): Targeting Innovation EE Solutions

TRIO roundtables bring together IOUs, EE industry-leading experts, entrepreneurs, investors, and universities to support the development of new, innovative EE technologies for incorporation into Program Administrators’ EE portfolios.



introduce new EE measures to the marketplace. TRIO symposia are intended to educate technology developers on the requirements that IOUs must apply to considering new technologies for inclusion in IOU programs. TRIO roundtables are targeted to a smaller audience and have focused on cost-effectiveness, Energy Management Systems, and Emerging Technologies Assessments. Market and behavioral studies investigate customer needs in targeted sectors to estimate customer reaction to new technologies and solutions. The key activity in which ETP engages is in communication and collaboration with industry.

2014 Strategies and Successes

In order to provide targeted support for technology development, PG&E and the statewide ETP team collaborated with a wide variety of industry partners and stakeholders, such as the Western Cooling Efficiency Center and the California Lighting Technology Center. The statewide ETP team also held a symposium on “How to do Business with Utilities,” which helped to educate the investor and technology communities on the requirements necessary to do business with utilities.

As part of the ETCC, PG&E fosters ongoing strategic relationships with investors who were interested in funding cost-effective EE measures. Via this collaboration, investors have brought forth several new technologies, two of which are currently under consideration for active Emerging Technologies engagements.

PG&E successfully hosted a 500+ attendee conference, Emerging Technology Summit 2014, as lead host utility collaborating closely with other ETCC Leadership Team members in October. The theme of the event was “Accelerating Innovation in Energy Efficiency.” The event received very positive response based on attendee survey feedback and helped ETCC stakeholders raise, discuss and debate several important topics related to bringing new ideas to market quickly and scaling adoption of those ideas. The event also featured an exhibitor showcase that allowed several start-ups and experienced vendors with new products to display their ideas for attendees.



Workforce, Education and Training

As part of meeting its ambitious EE targets, California needs a well-trained EE workforce knowledgeable to recognize EE opportunities and skilled to act upon those opportunities. WE&T provides members of the EE workforce the resources, knowledge, and skills it needs to reduce building energy use in the short and long-term. WE&T's target audience includes the current and next generation of designers, builders, engineers, architects, sales professionals, commissioning agents, technicians, contractors, and building operators.

In 2014, PG&E WE&T Program staff continued to demonstrate leadership in the local, state, and national EE and workforce arenas. WE&T staff members were advisors to local workforce development organizations and EE training programs. WE&T staff also presented at regional and national workforce development and technical conferences in addition to being technical EE advisors to professional industry organizations.

WE&T consists of three subprograms—Strategic Planning, Centergies, and Connections—described below.

Key Initiative: Stakeholder Engagement

PG&E led the effort to engage with a multi-stakeholder advisory team to advise the Donald Vial Center on completing the “Workforce Issues and Energy Efficiency programs: A Plan for California’s Utilities” (Guidance Plan). The Guidance Plan was completed in May 2014. Upon the completion of the Guidance Plan, PG&E led the effort to meet with a wide range of utility and non-utility stakeholders to better understand the impacts of the recommendations to their organizations, programs, employees, and customers. PG&E coordinated discussions with members of the Guidance Plan advisory team (consisting of industry professionals, the IOUs, advocacy groups, labor and Commission Staff) and other stakeholders that could be impacted by implementation of recommendations. Meetings included discussions around potential opportunities, concerns, and overall perspectives. Information from these stakeholder meetings informed the IOUs on how to prioritize the recommendations to develop a more structured and informed plan for addressing the Guidance Plan holistically. PG&E led the statewide effort to prioritize the Guidance Plan recommendations.

Strategies and Successes

2014 was a year of ongoing delivery of high-quality EE WE&T programs, education materials, technical advice, community outreach, and tool lending library activities. It was also a year of program redesign and expanding stakeholder engagement. 2014 efforts not only continued to meet current market needs, but also laid a foundation for future demands in the EE arena and for the direction for the WE&T Program.

WE&T Quick Facts

- WE&T is an important **cross-cutting program** that provides the energy efficiency workforce resources, knowledge and skills required to achieve utility and state energy efficiency savings goals in the short and long-term.
- Some WE&T **educational programs fill specific skills gaps**, while other programs provide broader understanding of the significance of energy savings opportunities.
- Both approaches—skills building and knowledge building—are important for **achieving PG&E's and California's energy efficiency targets**.



Implementation Challenges

WE&T plays a pivotal role in PG&E's portfolio of EE programs. Throughout 2014 and into 2015, PG&E along with the IOU WE&T team, met with several external stakeholders, internal stakeholders, and EE programs staff to discuss the details of implementing the recommendations provided in the Donald Vial Center on Employment in the Green Economy's (DVC) "Workforce Issues and Energy Efficiency programs: A Plan for California's Utilities" (Guidance Plan).¹⁰

The recommendations provided in the Guidance Plan represent an opportunity for the IOU WE&T team to progress WE&T efforts, focusing on initiatives to develop a high quality, highly skilled EE workforce for California. However, it was important for the IOU WE&T team to fully understand the Guidance Plan's impacts on its current EE portfolio and customers. As such, the IOU WE&T team focused its attention on thoughtfully reviewing and prioritizing the recommendations outlined in the Guidance Plan.

As with any plan of significant scope and impact, many steps are required to achieve quality results. These steps include, but are not limited to, conducting market research, data collection, data review, stakeholder engagement, establishing working groups, soliciting Requests for Proposals (RFP), awarding contracts, evaluating current efforts, and reviewing funding sources. PG&E looks forward to continuing to work through the required to implement the recommendations as appropriate.

Opportunities Moving Forward

Moving forward into 2015, the IOU WE&T team will focus on initiation activities for certain recommendations in the Guidance Plan. The IOUs selected the recommendations to initiate in 2015 based on several considerations including regulatory requirements, alignment with current activities and external organizations, marketplace opportunities, and financial, contracting and legal constraints.

IOUs identified recommendations that include activities already implemented within the current WE&T Program, as well as those recommendations that could be initiated and possibly incorporated with minor expansion or modifications within the approved 2015 WE&T Program budget. The WE&T team also identified recommendations that were priority issues for the WE&T Program, based on the considerations discussed above.

Certain other recommendations will be partially adopted by the IOU WE&T team for 2015. The full breadth of the IOU WE&T team's 2015 initiation activities are included in the Joint Advice Letter (PG&E Advice 3567-G/4592-E) filed with the CPUC on February 23, 2015. PG&E and the IOU WE&T team look forward to successful implementation, and making great strides in continuing to build a solid, high quality EE workforce for California.

¹⁰ In D.12-11-015, *Decision Approving 2013-2014 Energy Efficiency programs and Budgets*, the IOUs were ordered to hire an expert entity to develop a comprehensive approach to WE&T for the EE programs, in line with the goals in the Strategic Plan and the Needs Assessment recommendations. Through a competitive solicitation process and with the help of a network of stakeholders, the IOUs issued a Request for Proposal for a consultant to develop that comprehensive approach. On May 30, 2013, the contract was awarded to DVC. On May 2, 2014, DVC finalized its recommendations in the document *Workforce Issues and Energy Efficiency programs: A Plan for California's Utilities*.



WE&T Subprograms

WE&T Strategic Planning Subprogram

WE&T Strategic Planning efforts develop the framework for planning, coordinating, and implementing WE&T activities, partnerships, and recommendations to meet WE&T goals and to make program modifications to evaluate and incorporate market and stakeholder demand.

2014 Strategies and Successes

WE&T Strategic Planning efforts focused on demonstrating progress in two specific recommendation areas of the Guidance Plan; collaboration with the Division of Apprenticeship Standards (DAS) and inclusion.

One of the Guidance Plan recommendations was to better align the IOU WE&T training programs with existing core state education institutions, including but not limited to the California apprenticeship programs, California Community Colleges, and four-year institutions. In 2014, PG&E led collaboration efforts with DAS to infuse EE content into existing core apprenticeship training programs, and to “upgrade” journeymen with a broader knowledge of EE. DAS is a California state agency that promotes apprenticeship training through creation of partnerships, consults with program sponsors and monitors programs to ensure high standards for on-the-job training and supplemental classroom instruction. This collaboration effort laid the foundation for determining synergies between the IOUs and the carpenters training centers: IOUs expertise on EE could inform curriculum content, and that building diagnostics equipment from the IOUs’ tool lending libraries could improve existing training efforts at the apprenticeship training centers. The IOUs will build on these efforts and continue collaboration efforts in 2015.

In 2014, PG&E led the effort to frame a feasibility assessment for the Guidance Plan recommendations around inclusion—supporting workers from disadvantaged communities. A better understanding of the range of potential impacts, including direct costs, TRC, market participation, economic development, and other practical and legal implications is needed to implement associated recommendations responsively. This information will inform whether to implement, forgo, or modify inclusion recommendations. The IOUs developed a joint RFP for an inclusion consultant with expertise in the overlapping realms of workforce development, inclusion and EE to assist with these inclusion efforts.

WE&T Centergies Subprogram

PG&E’s WE&T Centergies subprogram consists of three Energy Centers—Pacific Energy Center in San Francisco, Energy Training Center in Stockton, and the Food Service Technology Center in San Ramon. These energy centers target the EE workforce in several market segments, including agriculture, foodservice, commercial, industrial, small and medium businesses (SMBs), and residential. Centergies provides in-person and web-based education and training programs, technical advice, research assistance, outreach events, and building performance tool loans.

Through an Online Registration Option, PG&E’s Centergies Program Extends the Reach of Its WE&T Offerings

In 2014, members of the WE&T Centergies team worked with a third party vendor to develop user specifications, engage multiple users across energy centers, and beta-test an **automated course registration system**. The online registration system streamlines the class registration process not only for PG&E staff, but also for the customer. The registration system allows users to create and maintain their own accounts, register for classes, and view their training history.

Furthermore, it sets the stage for developing a statewide registration system across IOUs.



2014 Strategies and Successes

The Centergies Program focused on continuing to delivery of high-quality EE WE&T programs, education materials, technical advice, community outreach, and tool lending library activities throughout PG&E’s territory. Training included a mix of market building and skills building offerings that included single day training as well as series of classes with multi-day training.

In addition to meeting filed goals, Centergies focused on improving operational efficiency and customer satisfaction through two primary efforts—implementing a new registration system and creating a platform for delivering online and on-demand classes.

To address operational efficiency and increasing customer demand for classes online, and to deliver content in the most appropriate manner, members of the Centergies team led a statewide effort to create a platform for online and on-demand trainings. The online learning platform will allow PG&E to reach a broader audience while providing customers the convenience of taking courses online. The online learning platform will provide an opportunity for in-person trainings to focus on more advanced principles by instituting prerequisite trainings available via online learning platform. Furthermore, requiring prerequisites via the online platform will allow instructors to focus topics that require in-person and hands-on exercises, thereby improving the in-person experience toward increased content retention.

WE&T Connections Subprogram

The WE&T Connections subprogram provides EE and energy career awareness programs across all educational levels including K-12, community college, and 4-year institutions. PG&E’s WE&T Connections subprogram includes five elements: Energenius (pre K-8), PEAK (K-8), Green 360 (9-12), PowerSave Campus (postsecondary), and Community College Fellowship (postsecondary). In 2014, PG&E’s WE&T Connections met all filed program goals.

In addition to meeting or exceeding the program’s goals for outreach and participation, the Connections team improved program offerings by incorporating recommendations by Opinion Dynamics Corporation, aligning with California Department of Education’s State Standards for curriculum, and continuing alignment with the Strategic Plan.

2014 Strategies and Successes

All Connections programs enhanced curriculum offerings to better integrate IDSM and career awareness concepts. Additionally, curriculum was updated to align with California Department of Education’s recently adopted Common Core State Standards and Next Generation Science Standards. Educators throughout the state are obligated to use educational materials that correlate with these standards.

Connections Celebrates 25 Years of Success!

This PG&E-developed program is celebrating its 25th year and distributed educational materials to over **81,000 students** (exceeding the goal of 60,000) in **710 schools** in 2014.

Approximately, **90 percent** of teachers evaluated the Energenius Program as very good or excellent.

Additionally, Energenius Program staff **partnered with PG&E’s low income and strategies program** to develop a modified Energenius curriculum on EE education written by California School-Age Consortium “CAL-SAC” for the afterschool market.



PG&E is linking and leveraging programs to provide and improve resources across age groups. For example, PG&E is aligning the Green 360 Program with the PEAK Program to reach more students more effectively.

The PEAK Program reached 231 schools and 10,273 students (exceeding the goal of 8,900) in PG&E service area. The PEAK Program Field Trip Resource Guides were introduced to teachers to support student experiences beyond the classroom and deeper hands-on exposure to career connections. In addition to supporting traditional schools, PEAK also launched an out-of-school energy program to support students and educators participating in afterschool programs.

The Green 360 Program provides career planning resources to high school students to identify pathways to green careers. In 2014, Green 360 piloted offerings to middle schools, colleges and community-based organizations serving at-risk youths to support pathways to high school career and technical education tracks, and from postsecondary education to green careers. Rising Sun, a workforce training community-based organization, used Green 360 curriculum materials for professional development at 15 training sites.

The PowerSave Campus Statewide Program continues its 10th year in the PG&E service area with interns at seven University of California (UC) and California State Universities (CSU) campuses. As a result of participating in the program, interns reported they are two times more familiar with energy concepts, and four times more familiar with energy auditing. In 2014, a vendor survey found that 93 percent of interns pursue employment in energy and sustainability fields after graduation and 77 percent (a 13 percent increase from 2013) credit their PowerSave Campus experience as an influence in that decision. Statewide, the annual average actual and potential energy savings was 191,000 kWh per campus.



Integrated Demand Side Management Program

The Strategic Plan recognizes the integration of demand-side management options, including EE, DR and DG, as fundamental to achieving California's strategic energy goals. To support this initiative, the IOUs have identified IDSM as an important strategic Demand-Side Management (DSM) policy priority and have proposed a series of activities, pilots and other programs in response to the Strategic Plan DSM Coordination and Integration Strategy.

A joint IOU and Energy Division Statewide IDSM Task Force was formed in 2010 and has continued coordinating activities that promote, in a statewide-coordinated fashion, the strategies identified in the Strategic Plan and the eight integration directives described in D.09-09-047.

2014 Strategies and Successes

The IDSM Task Force tracked multiple integrated emerging technologies and reviewed various programs, projects, IDSM Pilots and activities to identify integration efforts and opportunities, as well as to develop best practices.

The IOUs submitted four, joint quarterly reports for 2014, including an Executive Summary section to provide Energy Division staff with updates on the eight IDSM directives. All quarterly reports were uploaded and available for viewing on California Energy Efficiency Statistics Data Portal (EE Stats). The statewide IDSM Task Force held regular coordination phone calls to continue to ensure alignment across the state and discuss lessons learned.

The IOUs have developed well established processes ensuring delivery of integrated messaging via marketing, education and outreach to residential and business customers. Delivery of IDSM marketing has become more than just promotion of multiple programs within specific tactics like collateral or websites; it is now a key component in the planning phases of integrated marketing, education and outreach to help provide the right solutions to the right customer, at the right time.

In August 2014, Evergreen Economics published the study, "IDSM Integrated Demand Side Management Market Characterization." The study documents customer preferences, behavior

CPUC IDSM Integration Directives

1. Development of a proposed method to measure **cost-effectiveness** for integrated projects and programs including quantification and attribution methods that includes GHG and water reductions benefits and the potential long-term economic and electric and gas hedging benefits.
2. Development of proposed **measurement and evaluation protocols** for IDSM programs and projects.
3. Review IDSM-enabling **emerging technologies** for potential inclusion in integrated programs.
4. Development of cross-utility standardized **integrated audit tools** using PG&E's developed audits as a starting point.
5. Track **integration pilot programs** to estimate energy savings and lessons learned and develop **standard integration best practices** that can be applied to all IOU programs based on pilot program evaluations and the results of additional integration promoting activities (i.e., EM&V and cost-benefit results).
6. Develop **regular reports on progress** and recommendations to the CPUC.
7. Organize and oversee internal utility IDSM strategies by establishing **internal Integration Teams** with staff from EE, DR, DG, marketing, and delivery channels.
8. Provide feedback and recommendations for the utilities' **integrated marketing campaigns** including how the working group will ensure that DR marketing programs approved as Category 9 programs are coordinated with EE integrated marketing efforts.



patterns, and decision-making with respect to IDSM. It also characterizes key features of both supply and demand for IDSM in the open (non-program) marketplace.

Additional PG&E IDSM Program efforts focused on internal coordination of teams, marketing approaches and collateral, education and training of account representatives, tools needed to support integrated offerings and support of the Statewide IDSM Task Force. These ongoing efforts include an integration team, integrated marketing and outreach, external education and training, emerging technologies integration and support tools.

Financing Program

PG&E's EE Financing Program is designed to help customers finance the up-front cost of EE projects. The Statewide Financing Program is offered in conjunction with other PG&E EE programs to stimulate and enable higher levels of customer participation.

2014 Key Initiatives

On-Bill Financing Program Improvements

PG&E's OBF Program has seen a large year-over-year increase in loans from the SMB sector in 2014. This increase was supported by a successful collaboration between PG&E's OBF team, Solutions Marketing and OBF Channel Partners comprised of Third Party and Government Partnership EE Program implementers, trade professionals (Trade Pros) and other contractors. PG&E's successful marketing efforts have been highlighted at industry events, as detailed below.

The Finance Team has also collaborated with the Solutions Marketing team on content for PG&E's online Business Resource Center.¹¹ This content provides customers with resources on how to finance EE projects at their businesses.

During 2014, PG&E implemented Energy Insight for managing the sales and installation of EE measures, including those funded through the OBF Program, effectively across the organization. Energy Insight allows field staff to view the status of OBF applications and loans at any time. As the implementation of Energy Insight continues enhanced functionality will continue to support delivery of both the OBF Program and upcoming Finance Pilots.

PG&E's Finance team continues to focus on delivery of the OBF Program to ensure that the program meets the needs of our internal and external partners, as well as our customers. The program experienced exceptional growth in 2014, without a corresponding increase in program delivery costs due to these efforts. The Finance team continues to work with our partners to focus on operational excellence, training opportunities for our partners, and holding the OBF program accountable by closely monitoring processing times.

PG&E's SMB Customers Flock to OBF and Witness Significant Energy Savings Opportunities

In 2014, PG&E's OBF Program sponsored a local marketing campaign aimed at SMB customers.

Outcomes:

- **88%** increase in SMB loans originated in 2014 versus 2013
- **60%** increase in the total number of loans originated
- **24%** increase in the dollar amount of loans originated in 2014 vs 2013
- OBF projects did **2 times the number of measures as non-OBF projects** and **saved 3 times the kWh** (based on data from PG&E's Third Party Program Energy Smart Grocer)



¹¹

http://www.pge.com/en/mybusiness/save/smbblog/index.page?WT.ac=MyHome_Landing_BusinessResourceCenter.



Financing Pilots

Throughout 2014, PG&E and the Statewide Financing Team worked closely with Commission Staff on On-Bill Repayment (OBR) tariffs, and Program Implementation Plans.

PG&E's Finance team has continued developing the billing and IT system infrastructure to work with the Master Servicer for the Energy Financing Line Item Charge (EFLIC) and the OBR pilots. In 2014, PG&E collaborated with the IOUs and the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) in the implementation of D.13-09-044 through developing the Program Implementation Plans and the OBR electric and gas schedules, participating in CAEATFA's public rulemaking process, and collaborating with the statewide marketing plan.

Financing Website

PG&E's Finance team maintains an internet site (www.pge.com/eef) that directs customers to potential financing options, including OBF. The site includes a video describing the financing process as well as a case study that illustrates how financing can unlock EE potential. In 2015, this site will be expanded with additional financing options and additional case studies so customers can see how similar businesses have benefited from PG&E's financing programs. The Finance team also maintains an intranet page to share resources and best practices for financing projects with internal staff.

Strategies and Successes

PG&E's EE financing programs facilitate portfolio energy savings by allowing customers to pursue large, comprehensive efficiency retrofit projects that might not have been financially feasible otherwise. In 2014, the OBF Program experienced significant growth in applications and financed projects, totaling 479 loans issued for \$17.7 million. PG&E has also continued collaborative efforts with the Statewide IOUs, CAEATFA, and CSE to develop financing pilots that will offer more flexible terms to a broader array of customers.

PG&E's EE Financing programs allows customers to pay for their EE projects as they save money on their energy bill. Doing so allows them to undertake more comprehensive projects and, in some cases, projects that would not have been feasible without financing. A report released by PECL (now CLEAResult), who implemented PG&E's 2014 EnergySmart Grocer Third Party Program, confirmed that customers that use OBF do larger projects that generate more energy savings.¹²

¹² <http://aceee.org/files/proceedings/2014/data/papers/4-720.pdf#page=1>, "Widening Access to Energy Savings: Using On-Bill Financing to Bring Comprehensive Projects to Hard-to-Reach Customers," presented by PECL and PG&E at the ACEEE 2014 Summer Study on Energy Efficiency in Buildings.



Opportunities Moving Forward

For the OBF Program in 2015, we will continue to optimize our loan processing, thereby increasing the speed of project implementation and payment. This in turn will enhance OBF’s value as a tool for increasing investment in EE, and the realization of related savings, across the PG&E service territory. Faster project implementation will drive increasing customer interest and uptake from channel partners.

Financing Subprograms

On-Bill Financing

OBF is a key enabler of energy savings across customer classes, providing 0 percent financing for qualifying EE retrofits, with loan payments appearing as fixed monthly charges on the customer’s PG&E bill. OBF helps customers, who would otherwise have difficulty qualifying for or utilizing commercial credit, get over the first-cost hurdle to EE investment, unlocking broader and deeper cost savings while supporting PG&E’s energy savings targets.

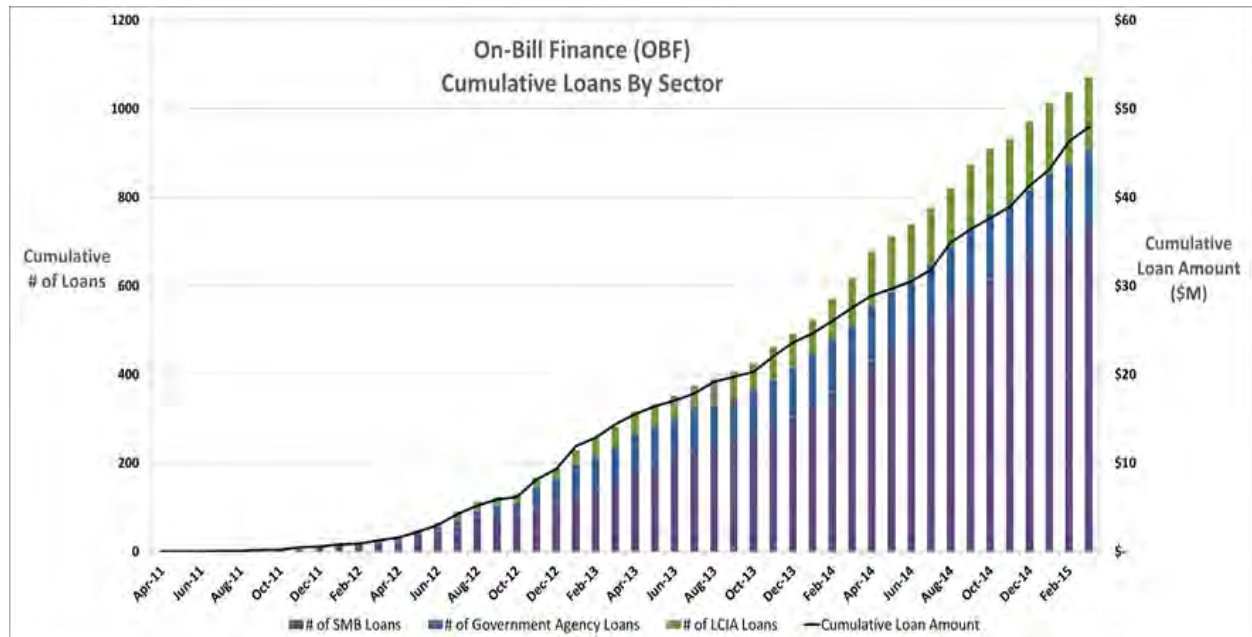
2014 Strategies and Successes

2014 was a banner year for PG&E’s OBF Program. The OBF Program, in collaboration with the PG&E’s Channel Marketing team, redoubled efforts to communicate OBF Program benefits to SMB customers and to provide PG&E’s account managers who focus on these customers with materials and training to help them utilize OBF.

OBF Bridges the Finance Gap for PG&E’s SMB Customers and Delivers Significant Savings

SMB customer segment saw particularly strong growth, with the **number of SMB loans originated increasing 88 percent** (190 to 360) and the **amount of SMB loans originated increasing 146 percent** (\$3.9M to \$9.6M) from 2013 to 2014.

In 2014, **OBF loans contributed to 40 GWh** of customer specific energy savings, represented by the energy savings used to calculate the loan repayments.



Through 2014, the On-Bill Financing subprogram continued issuing an increasing number of loans to small and medium business, government agency, and large commercial, industrial or agricultural (LCIA) customers.



Financing Pilot Programs

The IOUs are developing a set of statewide Financing Pilot programs designed to encourage private lenders to offer financing products specifically for EE projects by offering both credit enhancements in the form of loan loss reserves, and the option of loan collection by the utility on behalf of the lender (On-Bill Repayment or OBR).

The statewide pilots consist of the following on-bill repayment programs:

- Small Business OBR Loan Program
- Small Business OBR Lease Program
- Non Residential OBR without Credit Enhancements (CE) Program
- Master-Metered Multi-Family OBR Program

In addition, PG&E is in the process of launching the Residential EFLIC Program, to be offered in PG&E's service territory.

The Financing Pilots also consist of two off-bill programs:

- Single Family Loan Program (renamed the Residential Energy Efficiency Loan Assistance or REEL Assistance Program)
- Off-Bill Small Business Lease Providers Program

The pilots will include ratepayer-supported credit enhancements (CE) for residential properties and small businesses. The CEs are expected to provide additional security to third party lenders and private capital so they can extend or improve credit terms for EE projects.

2014 Strategies and Successes

The Financing Pilots will be administered by CAEATFA. These Pilots were expected to launch in 2013. However, the Pilots were delayed pending approval of CAEATFA's request for state legislative budget authority to act as the California Hub for Energy Efficiency Financing. CAEATFA received budget authority in July 2014. On August 25, 2014, the CPUC issued an Assigned Commissioner Ruling that ordered each finance pilot to operate for a minimum of 24 months, beginning at the point that each pilot program begins operation. The first regular track programs (off-bill programs) are scheduled to launch second quarter 2015 and the OBR and EFLIC programs are scheduled to launch third or fourth quarter 2015, once the statewide loan servicing function has been implemented by CAEATFA.

Third Party Financing

PG&E funded two ARRA continuation programs. The emPower SBC Program is administered by the County of Santa Barbara and is a joint co-funding effort between PG&E, Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas). The program leverages ARRA funding to create a public-private partnership between the County, all eight incorporated cities, the Home Upgrade Program, and two local credit unions.

The Golden State Finance Authority Loan product (formally CHF) uses a loan loss reserve to make financing available specifically for EE projects. The loans are available across the PG&E territory and can provide up to \$50,000 of funding to customers at affordable rates. The program is important as it provides an option for customers who are looking to perform whole house retrofits under the Home Upgrade Program.



Statewide Marketing, Education and Outreach Program

On December 27, 2013, the Commission established the Statewide Marketing Education & Outreach Program for the 2014 and 2015 cycle. SW ME&O efforts are coordinated by the CSE pursuant to D.13-12-038. This decision also adopted a “governance structure that, while leaving the details of running the statewide marketing campaign to CCSE (now CSE), also provides for strong oversight by the Commission and the CEC, while also allowing the utilities and others to provide collaborative input and advice.”

Energy Upgrade California is the “statewide umbrella brand for energy information and encouraging demand-side management actions.” (D. 12-05-015) Messages within the umbrella brand are not be limited to EE, and should also include generalized energy education and awareness, such as information related to DR, dynamic rate options, enabling technologies, climate change impacts, the Energy Saving Assistance program, DG investment, smart grid upgrades, and any other general impacts of energy use for individuals or for the state as a whole.

The IOUs and Regional Energy Networks (REN) are responsible for integrating marketing, education and outreach including providing information to CSE and the marketing firm in a timely manner, participating in the EM&V roadmap for marketing, coordinating with CSE on local and statewide marketing activities and raising any issues with the semi-annual marketing plans proposed by CSE. PG&E is the fiscal manager for the CSE statewide contract.

Strategies and Successes

CSE has filed semi-annual plans highlighting the concepts it intends to share with identified target audiences as well as the tactics and channels it plans to use to reach each target audience. The campaign officially kicked off on May 21, 2014.

The IOUs collaborate with CSE on all marketing phases from the development of strategy and ad agency briefing documents through creative development and execution to maximize the statewide messaging for the benefit of ratepayers. The IOUs provided comments on items ranging from the overall semi-annual integrated communications plans and brand architecture proposal to tools like the EUC website and even specific tactics such as the retail engagement and community based outreach strategies.



Descriptions and Strategies – Local Programs

PG&E administrators a variety of local programs designed to meet the unique needs of its customer base. In most cases, they cover “niche” markets and target specific, harder-to-reach customers, and/or focus on particular segments, geographies, technologies or market problems. Covering 70,000 square miles in Northern and Central California, and serving 15 million people, or 5 percent of the U.S. population, PG&E’s territory and customers are very diverse. Over 80 languages are spoken throughout PG&E’s territory, covering very rural to urban communities, with a diverse residential, commercial, agricultural and industrial base. In fact, PG&E’s territory includes all but one of the world’s climate regions—tropical rainforests. As such, PG&E leverages local programs to allow PG&E the flexibility to innovative and be locally-focused in product and sales techniques.

This section describes PG&E’s 2014 strategies and accomplishments for the following local programs:

Government and Community Partnerships

- Institutional Partnerships
- Local Government Partnerships

Third Party Programs

- Residential Sector
- Commercial Sector
- Industrial Sector
- Agricultural Sector
- WE&T



Government and Community Partnerships

The Government and Community Partnerships team at PG&E consists of 23 local and regional government partnerships as well as our institutional partnerships with the state of California, California Community Colleges, US/CSU, and Department of Corrections and Rehabilitation.

The 23 local partnerships share a mission of empowering commercial and residential customers in achieving energy savings and costs, reducing GHG emissions and supporting local economies. The partnerships consist of city and county governments, regional agencies, joint powers authorities, and community-based organizations that are integrated with the community.

PG&E works in close coordination with our partners to administer Energy Watch programs that achieve three overarching partnership objectives:

- 1) Improve the EE of municipal buildings,
- 2) Promote EE and environmental sustainability within the community, and
- 3) Support the local government goals of the Strategic Plan.

PG&E’s local government partnerships deliver EE incentives, tools and technical assistance to small and medium businesses, non-profits, residents, and public agencies via a Regional Direct Install model. Customers benefit from a high level of technical assistance and a turnkey installation model whereby the incentive payment is baked in to the project proposal, administered and installed by one of nine Direct Install implementers across the service territory. Our partners also work to meet the targets of the Strategic Plan by thinking proactively about EE in the context of California’s larger climate and GHG goals. Strategic Planning activities, also known as Strategic Energy Resources (SER), include energy and climate action planning, green building codes, benchmarking policies and training. The Statewide Energy Efficiency Collaborative (SEEC) operated under the SER Program in 2014.

Key Initiatives

In 2014, Government and Community Partnerships launched two new Local Government Energy Action Resources (LGEAR) partnerships: The Solano Energy Watch Program and North Valley Energy Watch Program. LGEAR partnerships represent the newest offerings from the Government and Community Partnerships channel and tend to generate the most innovative approaches to partnering with local communities. The Great Valley Center, Lake County Energy Watch, Butte, Yuba, Sutter Counties, Valley Innovation Energy Watch (VIEW), CA Green Business, and Yolo County Energy Watch operated as LGEAR partnerships in 2014 as

Government and Community Partnerships Quick Facts

- Government and Community Partnerships is the primary pathway for municipal and public sector customers to access financial and technical support in designing and implementing energy efficiency projects.
- In 2014, Government and Community partnerships delivered **15,389 kW** and **111,002,892 kWh** of energy savings.
- For municipal customers, the streetlights program provided **\$4.3 million** in incentives to **62** municipal customers.
- PG&E administers **four Statewide Partnership programs** and California Community Colleges, State of California, the University of California/California State University system and the Department of Correctional Facilities.
- In 2014, Statewide Partnership programs delivered significant gas savings for Government and Community Partnerships with **1.2 MMth** saved.

well. These partnerships provide their communities, in particular SMB customers, with access to the Regional Direct Install model. These partnerships also provide marketing, technical assistance and outreach to engage community members in saving energy.

PG&E's Partnerships also continued their leadership with local government climate action and GHG planning. To date since 2010, PG&E's government partners have produced over 250 GHG inventories and over 75 energy/climate action plans.

Strategies and Successes

Government and Community Partnerships are focused on delivering energy savings by bringing innovative strategies to customers that may encounter barriers to adopting EE measures above and beyond those of larger and well-resourced commercial facilities.

The SMB community is a core focus of the Regional Direct Install Program model. Small and medium commercial customers, or underserved customers, typically need additional support in designing and managing EE projects. In response, the direct install model provides participants with a turnkey program offering, project scoping and audits, technical assistance and financial incentives to enable these customers to pursue EE.

Implementation Challenges

In 2014, the Government and Community Partnerships team spearheaded an innovative approach to supporting customers and implementers in compliance with the updated 2013 Building Energy Efficiency Standards, known widely as Title 24, Part 6. For a transition period lasting six months, the partnerships offered implementers the on-call support and guidance of code experts to advise on project scope and design in the new post-Title 24 world. At the same time, the Partnerships group froze incentive levels through this transition period, offering higher rebates to customers while claiming reduced post-Title 24 savings so that the anticipated increase in project scoping time and technical assistance would be available to do the right job, in the right way. Despite initial concerns around the Title 24 roll-out, Government Partnerships offered a consistent and uninterrupted service to program participants, elevated the knowledge base for code

Serving Our Customers:

Bakersfield Church Receives Energy Upgrades, Improving Lighting, and Saving Energy and Money

A Bakersfield church received nearly \$30,000 in lighting upgrades in February 2014 that will help the nonprofit save energy and money and will continue to help them save long-term.

The work was made possible through PG&E's Local Government Partnership Program called **Kern Energy Watch**.

To start, the church received an energy assessment that helped identify work that could be done. The list included replacing 200 lighting fixtures in the church's activity center, gym, education classrooms and sanctuary entrance.

Lighting upgrades were done at a minimal cost of about \$2,000 after rebates. The energy-efficiency upgrades are expected to **help the church save about \$15,000 a year on its energy bills**. When complete, the church's basketball court shined brighter than ever.



Direct Install Implementer Staples installs energy efficiency lighting inside the gym and activity center at a Bakersfield-area church.



compliance among local contractors via trainings and the development of a guidebook, and achieved substantial energy and cost savings.

Opportunities Moving Forward

Government and Community Partnership work in 2015 is informed by the successes and challenges of 2014 for all sectors and stakeholders. Customers are benefiting from compelling invitations to participate, thanks to PG&E’s commitment to a streamlined and renewed marketing strategy. The success of the Title 24 transition has led to program efficiencies and tailored products offerings reflective of current market needs. Government and Community Partnerships continues to work closely with the PG&E Energy Efficiency Products team to bring new products to market and pursue innovative methods of introducing these measures.

PG&E is also exploring job order contracting, a pathway to expedite EE projects for municipalities, as a way to address some of the scoping, procurement, and construction barriers with public agency projects.

Institutional Partnerships Subprograms

Institutional Partnerships are designed to create working relationships among the four California IOUs, agencies of the state of California and/or state educational institutions. The objective of the Institutional Partnerships is to reduce energy usage through facility and equipment improvements and share best practices among state institutions. There were four Institutional partnerships in 2014.

PG&E’s Institutional Partnership portfolio focused on achieving energy savings and supporting the key Strategic Plan goal of DSM integration and coordination, which includes improving regulatory coordination, establishing integration procedures, and piloting DSM integration programs. The Institutional Partnerships also concentrated on innovative delivery channels and funding mechanisms to meet current economic conditions and achieve program integration and savings.



PG&E administers 23 local and regional government partnerships to meet the diverse needs of its unique customer base.



California Community Colleges (CCC)

The California Community Colleges/Investor Owned Utility (CCC/IOU) Energy Efficiency Partnership is a unique, statewide program to achieve immediate and long-term energy savings and peak demand reduction within California’s community college education system. The funding of nearly \$3.5 million for the 2013-2014 Program Cycle continued the progress established during the 2006-2008 EE Program Cycle to create a permanent framework for sustainable, comprehensive energy management at Community College campuses served by PG&E.

The CCC/IOU Partnership has provided extensive outreach and support services to the districts within the California Community College system in support of their efforts to identify, develop, and implement projects funded through Proposition 39.

The CCC/IOU Partnership’s support of the California Clean Energy Jobs Act (Prop 39) Program began in early-2013 and includes hands-on services from the four IOUs involved. Prop 39 was approved by California voters in 2012 and, among meeting objectives related to tax reform, will generate a projected \$550 million annually for appropriation by the Legislature for eligible projects to improve EE and expand clean energy generation in schools (K-14). These services include funding enhanced outreach, project development and technical support for 72 districts containing 112 campuses throughout California. Specific support tasks for Prop 39 include:

- Education about the CCC/IOU Partnership and Prop 39 Program opportunities
- Identification of projects and development of a “Call for Projects Lists” for submission to the Chancellor’s Office including rough order of magnitude of cost and savings estimates
- Creation of energy savings calculations which work for both IOU incentive programs and Prop 39 applications
- Technical verification of energy savings calculations through the IOU incentive applications processes
- Detailed creation of both IOU Incentive and Prop 39 applications and supporting calculations
- Coordination between CCC/IOU Partnership and Prop 39 Program
- Support for project status tracking and reporting

These efforts have resulted in the identification and funding across the State of over 280 Prop 39 projects. Further, this support has enabled full Prop 39 Program participation from all 72 districts, helping to ensure the success of this important statewide initiative.

**Highlights of Institutional Partnerships
2014 Strategies and Successes**

- Continued support services for **Proposition 39** funding to California Community Colleges include enhanced outreach, project development and technical support for **72 districts** containing **112 campuses** throughout California.
- Completed more than **115 Retrofit**, Monitoring Based Commissioning, and New Construction projects at **23 different UC and CSU campuses** (inclusive of UC Med Centers) across the Partnership for 2014.
- The **CDCR Partnership** filled its project pipeline and completed 14 projects in 2014.



University of California and California State Universities (UC/CSU)

The University of California/California State University/Investor Owned Utility (UC/CSU/IOU) Energy Efficiency Partnership is a unique, statewide program to achieve immediate and long-term energy savings and peak demand reduction within California’s higher education system. The PG&E program funding of approximately \$24.5 million for the 2013-2014 Program Cycle helped continue the permanent framework established in previous program cycles for sustainable, comprehensive energy management at campuses served by the IOUs.

The program has a hierarchical management structure to ensure successful implementation. The Management Team meets every three weeks to conduct business at the management level and the Executive Team meets quarterly to discuss overall program status and policy issues. The Partnership also has a Training and Education Team that organizes various EE trainings targeted to university campuses. In addition to representatives from each IOU, the University of California Office of the President and California State University Chancellor’s Office each have members on all three program management teams. Inclusion of all Partnership stakeholders at the various management levels provides the UC and CSU campuses with support in their efforts to implement EE projects. The Program Administrator actively tracks project savings and schedule data in a web-based tracking tool and creates regular reports to show overall status of the program and forecasts relative to goals.

Members of the management team also meet on a regular basis to document implementation progress, identify and resolve issues, and drive project completion. The Program Administrator actively tracks project savings and schedule data in an online tracking tool, and creates regular reports to show overall status of program or forecasts relative to goals.

Partnership Successes:

- Focused on meeting campus and IOU annual energy savings goals for 2014 project completion and achievement.
- Completed more than 115 Retrofit, Monitoring Based Commissioning (MBCx) and New Construction projects at 23 different UC and CSU campuses (inclusive of UC Med Centers) across the Partnership.
- Targeted completion of projects that would be subject to new 2013 Title code baseline in 2014 or include sun-setting measures.
- Additional projects generated from the California State University Chancellor’s Special Repairs funding initiative.
- Held various workshops for campus faculty and staff members, including Leadership in Energy & Environmental Design (LEED) for Healthcare, two Exceeding Title 24 workshops, two ASHRAE Level 1 Energy Auditing trainings, Building Operation Certification and Certified Energy Manager courses, and an Energy Performance Benchmarking Forum for New Construction projects.
- Held a UC/CSU Joint Energy Managers meeting as part of the CA Higher Education Sustainability Conference in CSU San Diego, highlighting upcoming code changes, campus best practices and Partnership Program updates.
- Created the Best Practices Case Studies to be published and distributed to various parties, promoting the Partnership’s statewide successes.



State of California Partnership

The state of California EE Partnership Program shares EE best practices and implements EE projects for immediate and long-term energy savings and peak demand reduction at state-owned facilities served by the IOUs and other partners.

The partnership assists state agencies, under the executive branch of the state government, to comply with Executive Order S-20-04 (Green Building Initiative). The effort will help reduce the amount of energy the state purchases off the electrical grid by 20 percent by the year 2015. This statewide partnership provides enhanced custom incentives and core programs for projects implemented in California's state owned and leased buildings. Additionally, the IOUs provide services for education and training activities. An objective of the partnership is to integrate and coordinate various utility programs to leverage incentives and encourage customers to expand their focus beyond EE. The activities achieve cost-effective energy savings through EE, RCx, equipment retrofits, new construction, Third Party programs, DR programs, and any applicable self-generation programs. The partnership also seeks opportunities to integrate utility incentives with financing options. This includes state financing through the Energy Smart Program (currently on hold), the American Recovery and Reinvestment Act Revolving Loan Fund, or the OBF Program to increase program participation in the partnership effort and encourage additional energy projects.

California Department of Corrections and Rehabilitation

The California Department of Corrections and Rehabilitation (CDCR) partnership is a customized Statewide EE Partnership Program that accomplishes immediate, long-term peak energy demand savings and establishes a permanent framework for sustainable, long-term comprehensive energy management programs at CDCR institutions served by California's four large IOUs. The 2013-2014 Program Cycle has incentive funding of approximately \$4.8 million available for qualifying EE projects. This program capitalizes on the vast opportunities for efficiency improvements and utilizes the resources and expertise of CDCR and IOU staff to ensure a successful and cost-effective program that meets all objectives of the CPUC. The program also leverages the existing contractual relationship between CDCR and ESCOs to develop and implement energy projects in CDCR facilities.

Regular Management and Executive Team meetings with program administrators have been key to identifying and managing projects, and to proactively address any challenges the program may have faced. The CDCR Partnership has ongoing challenge of finding funding for projects. OBF has been the primary source of funding and is supplemented by Special Repairs Project funding.

Local Government Partnerships Subprograms

PG&E's Local Government Partnership Program works with local governments and recognizes the roles they play in energy management as a distinct customer segment with unique challenges and needs related to implementing EE, as a comprehensive delivery channel for energy services to communities, and as community leaders. These partnerships help meet the goals of the Strategic Plan. PG&E had 23 local and regional partnerships in 2014 serving approximately 270 cities and counties.

Association of Monterey Bay Area Governments Energy Watch

The Association of Monterey Bay Area Governments (AMBAG) Energy Watch is a partnership between AMBAG and PG&E. AMBAG is a Council of Governments that is governed by a twenty-four member Board of Directors comprised of elected officials. AMBAG Energy Watch



region includes the Santa Cruz, Monterey and San Benito Counties and the 18 incorporated cities. AMBAG Energy Watch serves PG&E’s municipal, schools, special district, non-profit, agriculture and residential customers. Services include energy assessments and audits, Prop 39 support, technical assistance, assistance accessing low or no-interest financing, benchmarking assistance, and development of and assisting with implementation of regional energy action strategies.

Services provided by AMBAG include engineering services, the Regional Direct Install Program via Ecology Action, a third party implementer, and the Moderate Income Direct Install (MIDI) Program.

AMBAG Energy Watch offers a robust municipal program, providing both turnkey and customized EE solutions for city facilities.

East Bay Energy Watch

East Bay Energy Watch (EBEW) is a partnership between PG&E, local governments, and community-based energy service providers in the East Bay dedicated to providing innovative EE solutions for residents and businesses throughout Alameda and Contra Costa Counties. The EBEW partnership rests with EBEW’s Strategic Advisory Committee (SAC), consisting of local government staff spanning across the two counties, with a co-chair representing each county.

EBEW fosters a more integrated portfolio through the addition of new elements, increased coordination with PG&E’s core and third party EE offerings, and a more comprehensive approach to implementing EE measures in the municipal sector.

Services provided by the EBEW include the Local Government Partner Commercial Direct Install Program via DNV GL and Community Energy Services (CESC) SmartLights as implementers, the Local Government Partner Residential Direct Install Program with Rising Sun Energy Center as implementer, and the Municipal Implementation Team (MIT) Program.

**East Bay Energy Watch
2014 Program Highlights**

- Coordinated outreach campaigns and LEaD the Way kicker proposal resulting in just over **1,321 kW** and over **17.1 M kWh** in small/medium business direct install savings.
- Residential direct install and workforce development and training through Rising Sun Energy Center hired **221 youth** Energy Specialists serving just over **7,800 residents**.

2014 Strategies and Successes

In 2014, EBEW brought on board a Partnership Manager that facilitates the relationship between the EBEW SAC and PG&E. This position has fostered greater participation and engagement from local governments via the partnership in the East Bay.

Fresno Energy Watch

Fresno Energy Watch (FEW) partnership provides comprehensive EE services to the City of Fresno, County of Fresno, and the cities throughout the County of Fresno. The program is managed by the City of Fresno Department of Sustainability and the Economic Development Corporation serving Fresno County.

The FEW delivers cost-effective, comprehensive, and persistent energy savings through the leadership of the local government. The goals of the partnership are to provide comprehensive and integrated energy solutions, address community needs, and capture available energy



savings. Locally based EE seminars are offered to expand the audience for EE. The FEW also focuses on local energy policies that promote EE practices, codes, and standards.

Services provided by FEW include Home Energy Tune-Up, a Regional Direct Install Program by RHA, a third party implementer, and the MIDI Program. The Home Energy Tune-Up provides in-home energy assessments as a service to residential customers living in Fresno, Madera, Kings, Tulare, San Joaquin, and Kern Counties. Home Energy Tune-Up was previously funded by federal stimulus dollars under the ARRA). When ARRA dollars stopped coming to the city of Fresno, PG&E funded the program in Fresno and Madera Counties for the remaining six months of 2012, and then expanded the service to customers in Kings, Tulare, and San Joaquin Counties in 2014.

Great Valley Center

Great Valley Center (GVC) performs GHG inventories and climate action plans for jurisdictions in the Central Valley. GVC also implements the Energy Careers Experience Program that provides paid college student interns to PG&E offices throughout the Central Valley. These interns assist customers with energy assessments, community outreach, and other EE resources.

Kern Energy Watch

Kern Energy Watch is a unique cooperative partnership between PG&E, SCE, SoCalGas, the County of Kern, and the partner cities within Kern County. The Kern Council of Governments serves as the partnership implementer and the Kern Economic Development Foundation provides a business outreach program to small and medium sized businesses.

The Partnership provides assessments and the direct installation of energy saving measures in qualifying residences, businesses, and municipal facilities throughout PG&E’s service area in Kern County. The partnership also works to encourage the efficient use of energy by providing EE information at community events, by providing public and municipal education and training programs, and by providing audits and financial assistance to municipal customers for the energy efficient retrofit of municipal facilities.

**Kern Energy Watch
2014 Program Highlights**

- Community outreach event with Supervisor David Couch in the community of Derby Acres.
- Partnered with the City of Maricopa to promote PG&E energy efficiency programs resulting in **27 homeowners** participating in the ESA and MIDI programs.
- Provided direct install services to 194 small to medium-sized businesses and Municipal customers reducing their utility costs by over \$1,000,000 annually.

2014 Strategies and Successes

In 2014, the Partnership continued its efforts to partner with County Supervisors to reach out to the small, rural, high poverty level communities to assist the residents and businesses in utilizing the EE programs offered by PG&E and SoCalGas.

Lake County Energy Watch

Lake County Energy Watch (LCEW) provides a comprehensive portfolio of EE programs that targets municipalities, special districts, non-profit businesses, and hard-to-reach small to medium-sized businesses. The LCEW Program includes a direct-install program which includes lighting and refrigeration measures. The program also provides EE training and educational workshops for local contractors and residents.



Services include a Regional Direct Install Program by RHA, a third party implementer, and the MIDI Program.

Madera Energy Watch

Madera Energy Watch (MEW) offers a range of EE options for commercial, small business and residential customers, as well as municipal facilities. MEW works with local contractors, builders, building departments, and others to install energy efficient equipment to reduce energy use. Locally based training programs are offered to expand the audience for EE. MEW also focuses on local energy policies that promote EE practices, codes, and standards. MEW delivers cost-effective, comprehensive and persistent energy savings among local MEW partners.

Services provided by MEW include the Third Party and Government Partnership Direct Install Program. The program continued to offer the Home Energy Tune-Up as a service to residential customers living in Madera County (see Fresno Energy Watch section above).

Marin County Energy Watch

Marin County Energy Watch (MCEW) is a collaboration between the County of Marin Community Development Agency and PG&E to deliver cost-effective and comprehensive energy savings and incentives to local governments, businesses, schools, residential (single and multifamily), nonprofits, and special districts in Marin County. Services are delivered through three main program elements. The Marin Energy Management Team provides energy management services and assessments tailored to suit the unique needs of public agencies, municipal facilities, and schools in Marin County. The SmartLights Program provides start-to-finish technical assistance and energy assessments to nonresidential customers for lighting retrofits, and air conditioning and refrigeration system tune-ups. MCEW also works with California Youth Energy Services to deliver hardware installation, in-home energy assessments, and education to residential owners and renters while providing green jobs for local youth.

Services provided by MCEW include the Local Government Partner Commercial Direct Install Program by CESC SmartLights, a third party implementer, and the Local Government Partner Residential Direct Install Program and assists cities and the county with climate action planning.

2014 Strategies and Successes

The program provides customers, especially municipal customers, with long-term comprehensive EE planning and implementation services.

**Marin County Energy Watch
2014 Program Highlights**

- Currently assists 16 of Marin County's 19 school districts, providing valuable assistance with their **Prop 39** funds by reviewing their expenditure plans and connecting them with PG&E's incentives and resources for schools.
- Contributed to and helped the County of Marin launch the Marin Sustainability Tracker. A web-based dashboard that includes 12 metrics gauging a community's level of consumption and implementation of sustainability measures related to energy, waste, transportation, water, and GHG reductions.



Mendocino County Energy Watch

MCEW is a partnership between the Community Development Commission of Mendocino County and PG&E. MCEW offers a comprehensive portfolio of EE programs that target residential customers, municipalities, small businesses, and nonprofits.

Using a locally-driven approach, MCEW offers innovative EE programs and outreach services in one of the more sparsely populated counties in the state. Targeted market sectors include, single family and multifamily residential direct install, and commercial retrofit programs. The commercial program elements include a coordinated direct install program for lighting and refrigeration, education and outreach, EE workshops, and comprehensive energy audits for public facilities and small and medium businesses. MCEW also supports climate planning by providing municipalities with community-wide and municipal GHG emission inventories.

In 2014, MCEW exceeded its energy saving goals and were awarded an honorable mention certificate by the Pacific Southwest Regional Council of National Association of Housing and Redevelopment Officials for helping businesses and residents save energy and money, and completed the first behavioral-based EE program for the Public Housing Authorities in the State.

Services provided by MCEW include the Regional Direct Install Program via The Energy Alliance Association (TEAA), a third party implementer, and the MIDI Program.

Napa County Energy Watch

Napa County Energy Watch (NCEW) provides comprehensive EE services to municipalities, nonprofits, special districts, SMBs, and residential customers. Sustainable Napa County serves as the local program administrator. Services include audits, retrofits, outreach, and education. NCEW is uniquely positioned to influence energy conservation thanks to its deep roots and stellar reputation among municipalities, non-profits, and the vintner community. The partnership supports climate planning by taking the long-view, often including broader sustainability ventures across Napa County.

**Napa County Energy Watch
2014 Program Highlights**

- Supported the City of American Canyon with the implementation of their energy efficiency measures of their **climate action plan**.
- Wrote feature stories for the Napa Valley Register, a local newspaper, on the energy efficiency successes of nonprofit and small commercial customers that the partnership implements.

Services provided by NCEW include the Regional Direct Install Program by TEAA and the MIDI Program.

2014 Strategies and Successes

The program works in close coordination with PG&E customer relationship managers, active Third Party programs, and local trade associations in the County of Napa to deliver comprehensive EE services to customers.



North Valley Energy Watch

North Valley Energy Watch (NVEW) serves the SMBs that are hard to reach. NVEW utilizes locally-based entities to create inroads in the SMB community. In addition to the direct install program that features lighting and refrigeration measures, NVEW offers EE training and educational workshops for local contractors, interested business owners and residents.

Services provided by NVEW include Regional Direct Install Program via Richard Heath Associates (RHA), a third party implementer.

2014 Strategies and Successes

In 2014, NVEW exceeded their goals by continuing to develop relationships with local agencies and further developing their relationship with the participating municipalities providing continued educational support, EE planning and implementation services.

Redwood Coast Energy Watch

Redwood Coast Energy Watch (RCEW) is a partnership between PG&E and Redwood Coast Energy Authority (RCEA). RCEA is a Joint Powers Authority whose members include the County of Humboldt; the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad; and, the Humboldt Bay Municipal Water District. RCEW achieves energy savings through a comprehensive, locally-driven approach in Humboldt County.

RCEW provides comprehensive energy management services and incentives through three main program elements. The Small Business Direct Install program offers hard-to-reach, small businesses with turnkey services as well as project management by a RCEA energy specialist. The Residential Program offers single-family homeowners no-cost energy assessments and installs a range of low-cost and no-cost measures while promoting PG&E's Residential Rebate Program. RCEA also offers larger customers project management assistance with nonresidential retrofit projects. RCEA also offers climate and energy planning assistance to reduce community energy usage.

**North Valley Energy Watch
2014 Program Highlights**

- Worked with PG&E's Energy Service and Sales representatives (ES&S) and RHA to provide significant savings for schools in the NVEW territory.
- Successfully worked with the Shasta Private Industry Council (Smart Resource Center) and **Job Training Center** of Tehama County by training their outreach specialists in energy efficiency and PG&E programs. Outreach specialists were able to contact many hard-to-reach businesses providing the partnership with numerous opportunities and leads.
- RHA, the direct install implementer, provided a new product show to the partnership and now uses working LED examples when meeting with customers allowing the customer to see the benefit of the products.

**Redwood Coast Energy Watch
2014 Program Highlights**

- In a partnership with PG&E and Humboldt State University, provided the Blue Lake Rancheria Tribal Membership with strategic guidance and energy management services, playing a key role in the Tribes' **recognition by the White House as one of 16 "Climate Action Champions"** for their extensive efforts in GHG reductions, transitions to renewable energy and green fuels, ongoing energy efficiency, environmental protection, and community resiliency.
- Completed GHG inventories for all local municipalities and the County of Humboldt.
- Offered residential customers an innovative, low-cost Energy Upgrade California Home Upgrade Rater Pathway service, providing a prequalification gateway to Home Upgrade California participation.
- Kicked off a unique turnkey program to offer **Prop 39 Energy Management services** to Humboldt County Local Educational Agencies.
- Provided **993 unique energy management services** to residential and non-residential ratepayers.



2014 Strategies and Successes

In 2014, the program delivered energy savings through its Small Business Energy Efficiency Program, a Residential Direct Install Program, a Non-Profit Energy Efficiency Program, and a Public Agency Energy Efficiency Program. The Redwood Coast Energy Authority’s commercial and residential programs have been the catalyst for multiple EE, GHG reduction, and renewable energy development projects.

San Francisco Energy Watch

San Francisco Energy Watch (SFEW) is a Partnership between the City and County of San Francisco and PG&E to deliver a broad spectrum of EE measures and savings for businesses as well as multifamily facilities in San Francisco. SFEW provides comprehensive energy management services and incentives through three main program elements. The Small Business Direct Install Program offers hard-to-reach, small businesses turnkey services, and complete project management by a program-assigned contractor. The Commercial Plus and Multi-Family Plus programs use a market-based, vendor-driven model to offer property owners and larger businesses technical assistance and energy assessments for installing a wide range of low-cost measures. SFEW also offers larger customers incentives for calculated, nonresidential retrofit projects.

Services provided by SFEW include the Local Government Partner Commercial Direct Install Program and the Local Government Partner Residential Direct Install.

2014 Strategies and Successes

In 2014 the program coordinated with PG&E’s ES&S team to provide trainings and networking opportunities to contractors serving the City and County of San Francisco. The collaboration with PG&E opened up new markets for innovative products beyond just lighting, and the Partnership led three successful campaigns in fall 2014, targeting customers by sector and technology.

San Luis Obispo County Energy Watch

San Luis Obispo County Energy Watch is a partnership between PG&E, SoCalGas, the County of San Luis Obispo, and the seven incorporated cities within San Luis Obispo County. The County of San Luis Obispo serves as the partnership implementer, supporting the planning and implementation of the Climate Action Plans, as well as EE services both the local residential and non-residential EE programs.

2014 Strategies and Successes

In 2014 the program coordinated with PG&E and SoCalGas to promote local programs and services, such as Title 24 trainings for contractors and building inspectors, the Small Business Direct Install Program for SMBs, and the Large Integrated Audit Program to engage Community Service Districts with a high value, no-cost service for identifying energy saving opportunities.

**San Luis Obispo Energy Watch
2014 Program Highlights**

- The County of San Luis Obispo and PG&E coordinated closely over several months to **engage nine underserved Community Service Districts** to provide no-cost, comprehensive energy audits that identified deep gas and electric savings opportunities.
- This was made possible by taking the innovative approach of considering the cumulative needs of this group of customers to justify providing **Large Integrated Audit** services when individually they would have been too small to qualify for participation.
- It was a team approach between the County, PG&E account managers, and PG&E program managers to bring this effort to fruition for the benefit of the customers.



San Mateo County Energy Watch

San Mateo County Energy Watch (SMCEW) is a partnership between the City/County Association of Governments of San Mateo County (C/CAG) and PG&E. SMCEW’s goal is to reduce energy usage through EE in San Mateo County, including its twenty cities and unincorporated areas. C/CAG is a Joint Powers Authority consisting of all 20 cities and the County of San Mateo that enables direct contact to all levels of management at the city and county governments.

SMCEW delivers a comprehensive portfolio of EE services to public agencies, nonprofits, small businesses, schools, and residential customers including direct install programs for lighting and refrigeration measures, audits, benchmarking, technical assistance for more complex EE projects through PG&E’s Customized Retrofit Program, and EE training, education workshops, and classes.

Services provided by SMCEW include the Regional Direct Install Program for SMB customers by Ecology Action, Technical Energy Solution Services and the MIDI Program.

Santa Barbara County Energy Watch

Santa Barbara County Energy Watch is a partnership between PG&E, SoCalGas, the County of Santa Barbara, and the cities of Buellton, Guadalupe, Santa Maria, and Solvang. The Santa Maria Valley Chamber of Commerce serves as the partnership implementer within PG&E’s service area which covers only the Northern County area.

The partnership provides assessments and the direct installation of energy saving measures to qualifying residences, businesses, and municipal facilities throughout the Northern Santa Barbara County service area. The partnership also works to encourage the efficient use of energy by providing EE information at community events, by providing public and municipal education and training programs, and by providing audits and financial assistance to municipal customers for the energy efficient retrofit of municipal facilities.

**Santa Barbara Energy Watch
2014 Program Highlights**

- Held a community outreach event with Supervisor Doreen Farr in the community of Tanglewood.
- Organized a community outreach event with Supervisor Steve Lavagnino in the communities of Sisquoc and Garey.
- Provided **direct install services to 77 small to medium-sized businesses** and Municipal customers reducing their utility costs by over \$400,000 annually.
- Coordinated a Green Business and Energy Efficiency Forum attended by dozens of businesses in Santa Maria.

2014 Strategies and Successes

In 2014, the Partnership continued its efforts to partner with County Supervisors to reach out to the small, rural, high poverty level communities to assist the residents and businesses in utilizing the EE programs offered by PG&E and SoCalGas.



Sierra Nevada Energy Watch

Sierra Nevada Energy Watch (SNEW) is a partnership between PG&E and Sierra Business Council, a non-profit sustainability organization serving the Sierra Nevada region. The SNEW territory is comprised of 14 rural Sierra counties, including Lassen, Butte, Sutter, Plumas, Yuba, Sierra, Nevada, Placer, El Dorado, Amador, Calaveras, Alpine, Tuolumne, and Mariposa. SNEW is dedicated to providing innovative EE solutions for local governments and businesses throughout the Sierra. SNEW coordinates the strengths of PG&E and the counties and cities within the foothill region to overcome energy-efficiency barriers and better serve the unique needs of small mountain and rural communities.

SNEW provides comprehensive, sustained technical services to municipal, nonprofit, and small business customers. SNEW’s Commercial Program includes the Energy Watch Tune-Up Program to help businesses save energy and money. This regional program provides a comprehensive energy assessment, delivers money-saving measures, and connects businesses with other energy saving opportunities. The Energy Watch Municipal Program offers assistance with benchmarking and energy assessments of government facilities and provides low-cost EE equipment. SNEW also offers climate and energy planning assistance to reduce community energy usage.

Services provided by SNEW include the Small Commercial Direct Install Program and the Regional Direct Install Program implemented by Sierra Business Council.

Silicon Valley Energy Watch

Silicon Valley Energy Watch (SVEW) provides targeted EE education, outreach, energy savings delivery, and overall energy program coordination in Santa Clara County. Implemented locally by the city of San Jose, SVEW works closely with PG&E, other local stakeholders, and third party providers to augment the success of regional programs through enhanced coordination and outreach, and ensure that targeted customers take advantage of the broad range of audits, rebates, benchmarking, EE training, education workshops, and classes.

Services provided by SVEW include a Regional Direct Install Program implemented by Ecology Action and the MIDI Program.

Solano Energy Watch

Solano Energy Watch (SEW) provides comprehensive EE services to municipalities, nonprofits, special districts, SMBs, and residential customers. The partnership is comprised by three parties: Solano Economic Development Corporation, the County of Solano, and Rising Sun Energy Center, a third party implementer. Each partner specializes in different target markets and brings their local expertise to bear. Services include audits, retrofits and outreach. The

**Sierra Nevada Energy Watch
2014 Program Highlights**

- Leveraged their expertise at delivering locally-driven campaigns by significantly reducing peak energy demand at a capacity-constrained substation in the Central Valley.
- Offered 11 jurisdictions GHG inventories and moved the needle from simply offering energy usage measurement to defining tailored strategies for energy reduction by completing **Energy Action Plans for 5 local governments.**
- Completed a “Water-Energy” Nexus assessment study focusing on gathering leak detection data across five small-to-intermediate water agencies in the Sierra region in order to offer insights into the agencies’ efficiency of their larger pumps and provide specific recommendations for on-the-ground projects to improve efficiency.



partnership launched in 2014 and has already showed strength in outreach to Solano County residents, SMB customers, and municipalities.

Services provided by SEW include the Regional Direct Install Program by TEAA, a third party implementer, and residential direct install with the California Youth Energy Services Program by Rising Sun Energy Center.

Sonoma County Energy Watch

The Sonoma County Energy Watch (SCEW) offers a comprehensive portfolio of EE programs that primarily target municipalities with elements that also provide outreach to SMBs, nonprofits, and residential customers. The local administrator, County of Sonoma Department of General Services, aims to lead by example and is working in partnership with other cities in the county to promote programs and initiatives in energy conservation and efficiency, clean energy generation, and environmental programs.

Services provided by SCEW include the Regional Direct Install Program implemented by TEAA and the MIDI Program.

2014 Strategies and Successes

The program leverages local government connections and expertise to achieve EE objectives.

Butte, Yuba, Sutter Counties Energy Efficiency Partnership

Butte, Yuba, Sutter Counties Energy Efficiency Partnership targets residential customers and the program also provides EE training and educational workshops for local contractors and residents.

Services provided include the MIDI Program.

In 2014, the Sutter Buttes Partnership developed a coordination strategy for 2015 targeting schools and local municipalities to best determine the needs of the area and continued to support MIDI outreach in the area.

**Sonoma County Energy Watch
2014 Program Highlights**

- SCEW worked in partnership with PG&E and local community partners to host the first annual Local Energy Action Forum. The main objective of the forum was to recognize Sonoma County businesses who are leaders in energy efficiency. The event was also used to generate awareness and leads for energy efficiency audits and retrofits.
- Featured SCEW through energy efficiency interactive exhibits in the County of Sonoma Energy and Sustainability Division's Greentivities showcase at the annual Sonoma County Fair. Over 80,000 fairgoers came by to learn about sustainability.

**Butte, Yuba, Sutter Counties Energy Watch
2014 Program Highlights**

- Provided BPI certification classes for local contractors, providing the community with certified contractors, where there had been none, to install energy efficient measures in their area.
- Created a **Tool Lending Library** so customers can check out equipment and not have to drive long distances or order by mail.
- Worked with several schools and provided benchmarking services to assist with the **Prop 39** proposals.
- Coordinated with local MIDI provider to benefit local low-income residents.



Valley Innovative Energy Watch

Valley Innovative Energy Watch (VIEW) is a unique cooperative partnership between PG&E, SCE, SoCalGas, the County of Kings, the County of Tulare and the partner cities within these counties. The San Joaquin Valley Clean Energy Organization serves as the partnership implementer.

The Partnership provides assessments and the direct installation of energy saving measures in qualifying residences and businesses and benchmarking, audits and project management assistance for city and county facilities located in the PG&E service area. The partnership also works to encourage the efficient use of energy by providing EE information at community events, by providing public and municipal education and training programs, and by providing financial assistance to municipal customers for the energy efficient retrofit of municipal facilities.

2014 Strategies and Successes

In 2014, the VIEW Partnership continued its efforts to partner with County Supervisors to reach out to the small, rural, high poverty level communities to assist the residents and businesses in utilizing the EE programs offered by PG&E and SoCalGas.

Yolo County Energy Watch

Yolo County Energy Watch (YCEW) promotes EE and the reduction of GHG emissions in local government operations. In addition, YCEW promotes the reduction of GHG emissions throughout the community primarily through programs targeting government facilities, nonprofit organizations, small businesses, residences, farms, schools and factories in Yolo County. YCEW provides a direct-install program that provides energy efficient measures to municipal facilities, non-profit businesses, special districts and hard-to-reach SMBs. In addition to the direct install program, the YEW brings EE training and workshops to the residents making the classes easier to attend.

Services provided by YCEW include the Regional Direct Install program implemented by RHA.

2014 Strategies and Successes

In 2014, the Partnership continued its efforts to partner with local agencies to reach out to the small, rural communities to assist the residents and businesses in utilizing the EE

**Valley Innovative Energy Watch
2014 Program Highlights**

- VIEW organized a community outreach event with Kings County Supervisor Joe Neves in the community of Kettleman City.
- Organized a community outreach event with Tulare County Supervisor Pete Vander Poel in the community of Alpaugh.
- Provided direct install services in Kings and Tulare Counties to **44 small to medium-sized businesses** and Municipal customers reducing their utility costs by over \$250,000 annually.

**Yolo County Energy Watch
2014 Program Highlights**

- Partnered with the City of West Sacramento and Yolo County Office of Education to provide energy efficiency training and lesson plans for teachers and a **Summer Academy Class** for students entitled “Energy and Agriculture.”
- Continued with business-focused campaigns with local Chamber of Commerce.
- Implemented a **Greening of the Greeks** Program providing energy efficiency assessments, recommendations and education to local fraternities and sororities.
- Initiated a **Young Energy Leaders** Program that placed interns in energy efficiency related internships. Two interns have accepted full time work that resulted from their internships.



programs offered by PG&E. The YCEW has been the stimulus for multiple EE, renewable energy development, and GHG reduction projects in many businesses, cities and the county.

California Green Business Program

PG&E supports the EE-related implementation of the California Green Business Program (GBP) by partnering with the California Green Business Network (CAGBN). GBP is a state-recognized program to guide SMBs toward more sustainable operations including solid waste, pollution prevention, EE and water conservation. GBP guides SMBs toward more sustainable operations. A network of GBPs run at the city and county level across the State has joined forces to share resources and they are collectively called the California Green Business Network. As of 2014, PG&E dispersed funding to more than 10 local GBPs and acted as the administrator of a statewide database essential to the function of all GBPs statewide. This funding has allowed for the use of student interns from various Green Jobs training programs to conduct energy audits and provide technical assistance to SMBs.

2014 Strategies and Successes

The program launched a new interactive homepage at www.greenbusinessca.org that included information on how to apply for the program and how to find a green business. In addition, the website features detailed content on how to start a Green Business in a city or county, a blog tied to Facebook and LinkedIn, and most notably, a large banner to celebrate the program's environmental outcomes.

Statewide Energy Efficiency Collaborative

The Statewide Energy Efficiency Collaborative (SEEC) is a collaboration among three statewide non-profit organizations and California's four IOUs. SEEC provides education and tools for climate action planning, venues for peer-to-peer networking, technical assistance and recognition for local agencies that reduce GHG emissions and energy use. SEEC partners include the Local Government Commission, the Institute for Local Government, and ICLEI – Local Governments for Sustainability. PG&E acts as lead coordinator for ICLEI's involvement in SEEC.

Statewide Energy Efficiency Collaborative 2014 Program Highlights

- 7 new Beacon Participants, totaling **62 cities and counties** representing more than **25% of California's population**.
- 27 Beacon Spotlight Awards, 1 Full Beacon Award
- SEEC ClearPath California launched with 280 registrants and training provided to almost **180 local government staff** people.
- The 5th Annual Statewide Energy Best Practices Forum with over **350 attendees** to share local government energy efficiency best practices.



Third Party Programs

Third Party programs provide turnkey and concierge services for PG&E’s customers, which facilitate participation in EE programs and increase customer satisfaction. Third Party programs are more locally-focused than the IOUs’ statewide programs and serve niche and hard-to-reach markets. Third parties are responsible for the program implementation, including project design, technical assistance, outreach and marketing, implementation, job processing, quality assurance and control, and in some cases, incentive payments. PG&E guides program implementation strategy for Third Party programs. Third Party programs are designed to either implement new and innovative ideas or meet local needs and produce the most cost effective energy savings that meet or exceed savings goals.

PG&E’s Third Party Program Objectives

PG&E’s Third Party programs overarching objectives are to:

- Serve as a test-bed for new ideas, advanced technologies or innovative approaches
- Provide targeted solutions for customers including stranded energy savings opportunities
- Engage “niche” customers that are traditionally harder to reach (geographically or demographically)
- Serve as sales channel partners to help educate customers about other program offerings and drive comprehensiveness to maximize customer interaction

In 2013, PG&E issued an “innovation” solicitation for third party implementers to design additional EE programs both within a targeted and open-ended framework. PG&E’s IDEEA365 Program was designed specifically to provide broad latitude for third party vendors to propose innovative new programs. Most IDEEA365 programs were launched early in 2014 and have been building market traction throughout the year. These IDEEA365 programs are listed below, and described in the following sections:

PG&E’s 2014 IDEEA365 Programs			
Residential	Commercial	Industrial	Agricultural
<ul style="list-style-type: none"> • High Efficiency Water Heater 	<ul style="list-style-type: none"> • Analytics Enabled RCx • Bridges to Energy Sector • Laboratory Fume Hoods • Commercial Outreach • Data Centers Plus • Energize Schools • Dynamic Gas Scavenging Systems • Commercial Mid-Market 	<ul style="list-style-type: none"> • Water Infrastructure System Efficiency • Intelligent Energy Efficiency Program 	<ul style="list-style-type: none"> • Low Pressure Irrigation

In 2015, PG&E plans to issue a new IDEEA365 solicitation for third party implementers to design additional programs. Thereafter, PG&E plans to allow for “rolling” entrants of third party designed programs.

Residential Third Party Programs

PG&E’s Residential Third Party programs are an integral component of its overall residential sector strategy to help provide customers with energy efficient solutions and services. See the Residential Program section for more information about the other PG&E programs serving this customer sector.

California New Homes Multifamily Program

Implementer: *TRC*

The CMFNH Program, together with CAHP for single-family homes, makes up PG&E’s Residential New Construction subprogram efforts. The CMFNH Third Party program provide comprehensive support for saving energy in the residential new construction sector with a cross-cutting focus on sustainable design and construction, green building practices, EE, and emerging technologies. Through a combination of education, design assistance and financial support, the programs work to encourage building and related industries to exceed California’s Title 24 EE standards, and to prepare builders for future changes to these standards.

Cooling Optimizer Program

Implementer: *Proctor Engineering*

The Cooling Optimizer Program (also known as Enhance Time Delay Relay) is a direct install program serving single family, multifamily and mobile home residential customers in targeted Climate Zones. The program improves the efficiency of air conditioners by running the fan at the end of the compressor cycle, evaporatively cooling the air returning to the building. The program also supports the introduction of retrofit high efficiency fan motors with enhanced time delay integrated into the motor that reduces fan power consumption during heating, cooling, ventilation and fan time delay.

Direct Install for Manufactured and Mobile Homes Program

Implementer: *Synergy Companies*

The Direct Install for Manufactured and Mobile Homes Program is designed to be a direct installation, no-cost-to-the-customer, program that serves the hard-to-reach residents of manufactured homes and mobile home parks in PG&E’s service area. It also targets a variety of non-English speaking customers. The program improves the efficiency of air conditioners by providing air conditioning tune-up and refrigerant charge adjustment, fan controls to save energy by running the fan at the end of the compressor cycle and high efficiency blower motor upgrades. Further, ENERGY STAR® rated products including lighting, low-flow showerheads and aerators are installed.



PG&E’s Direct Install for Manufactured and Mobile Homes offers hard-to-reach customers low-cost options to save energy and lower their energy bills.

Residential IDEEA365 Programs

High Efficiency Water Heater Program

Implementer: *CLEAResult (formerly Integrated Resource Solutions Group)*

The High Efficiency Water Heater Program was designed to promote and sustain market acceptance of high efficiency water heaters. The program was an expansion of PG&E’s core program that allows participating contractors to offer a rebate as an instant discount to their customers for the installation of qualified efficient natural gas storage water heaters and electric heat pump water heaters. The program targeted single-family, multifamily and mobile home residents across the PG&E service



territory. The program was closed at the end of 2014 because it was not able to demonstrate an ability to meet program objectives. Please refer to PG&E Advice Letter 3539-G/4545-E.

Commercial Third Party Programs

Third Party programs represent an important delivery channel for the Commercial Sector. The programs offer a turnkey approach that continues to deliver savings, serve customer needs as well as stay innovative by adapting to changing market needs. PG&E offers a variety of Commercial Third Party programs that span various market sectors, targeting many of PG&E’s harder-to-reach customers.

PG&E's 2014 Commercial Third Party Programs¹³						
Commercial Third Party Programs	Retail	Office	Hospitality	Municipal, Universities, Schools, Hospitals (MUSH)	SMB	WE&T
Air Care Plus	x	x		x	x	
Boiler Energy Efficiency	x	x		x		
EnergySmart Grocer	x				x	
Furniture Stores	x				x	
LED Accelerator	x	x		x		
Lodging Savers			X		x	
Casino Green	x		X		x	
Energy Fitness Direct Install	x	x		x	x	
RightLights Direct Install	x	x		x	x	
Energy Savers Direct Install	x	x		x	x	
K-12 School Energy Efficiency				x		
Private Schools				x		
Healthcare Energy Efficiency				x	x	
Commercial Mid-Market (IDEAA 365)	x	x		x		
Commercial Real Estate Outreach (IDEAA 365)		x				
Data Centers Plus (IDEAA 365)		x		x	x	
Energize Schools (IDEAA 365)				x		
Analytics-Enabled RCx (IDEAA 365)				x		
Bridges to Energy (IDEAA 365)						x
Dynamic Gas Scavenging (IDEAA 365)				x		
Laboratory Fume Hoods (IDEAA 365)				x		
Monitoring-Based Persistence Commissioning Program**	x	x				
Small Business Commercial Comprehensive**	x	x			x	

¹³ Double asterisk (**) represents Third Party Programs that were closed in 2014.



Energy Efficiency Parking Garages**	X	X		X	X	
Monitoring Based Commissioning**		X				
Enhanced Automation Initiative**		X				
Ozone Laundry**			X	X		

LED Accelerator (LEDA) Program

Implementer: Energy Solutions

LED Accelerator encourages large commercial retail customers to install best-in-class LEDs, which over time, increase the quality of LEDs offered to the broader market. The program offers three tiers of equipment specifications and incentives helping create a market for manufacture's best-in-class products while the higher incentives make the project cost effective for customers to install these more expensive offerings. As sales volumes of the best-in-class products increase, the associated product costs decrease, and products with higher efficacy and better light quality become readily available to the general market.

2014 Strategies and Successes

LEDA provides technical services that include auditing, LED product selection, pilot demonstration, economic analysis for decision making, financing assistance, monitoring and application support. Specific strategies for successful projects include:

- Informing customers about innovative LEDs and encouraging the installation of higher EE products than originally specified.
- Working with manufacturers to design custom LED products.
- Establishing compelling proposals, including financial incentives and project financials, for decision makers to move forward on projects.
- Conducting post-audits to ensure more accurate energy results and implementing a robust quality assistance and quality control program.

Furniture Store Energy Efficiency Program

Implementer: Matrix Energy Services

The Furniture Store Energy Efficiency Program provides furniture stores with lighting upgrades specifically for their retail spaces. It is designed as a quick turnaround program specifically targeting small and medium furniture retailers. The Matrix Program staff conducts energy audits at the customer's facility and recommends EE upgrades. Matrix's team of skilled installers will then perform the agreed upon equipment retrofits.

2014 Strategies and Successes

One of the most effective strategies was a robust integration with PG&E's account representatives and the program implementation team. By approaching the customer together on the initial visit, the PG&E account representative and program implementation team worked

LEDA 2014 Program Highlights

- LEDA incented one customer, who saved **2.7 annual GWh**, reduced peak demand by **720 kW**, while qualifying for an \$824,000 incentive and creating a 2.3 year payback. LEDA and the customer worked with four competing manufacturers to improve the energy efficiency and quality of the low- and high-bay LED fixtures. In addition, Automated Demand Response was also installed at the warehouse.
- LEDA worked with commercial customers to design an ambient LED troffer that met customer aesthetic requirements as well as LEDA equipment specifications. The multi-site project saved **1.9 annual GWh**, reduced peak demand by **471 kW**, while qualifying for a \$364,000 incentive and creating a 2.4 year payback.
- LEDA served **18 retail chains**. For example, one customer retrofitted LED lamps at 10 stores, **saved 663,000 annual kWh**, reduced peak demand by 130 kW, while qualifying for a \$94,000 incentive and creating a payback of under a year.





together to increase customer participation and installation turnaround. In addition, the program operated a full-service call center for inbound and outbound calls and customer referrals to market and schedule assessments. The call center is also used to follow-up with customers who have received mailing campaign collateral as another way to enhance lead conversion.

Air Care Plus Program

Implementer: CLEAResult

AirCare Plus is a low-cost HVAC program that tunes key components of customer HVAC systems for optimal performance. The AirCare Plus Program provides HVAC diagnostic tools and training to qualified contractors, and manages installation of quality HVAC tune-up services. In 2014, the program recruited and trained new contractors providing increased program capacity and regional coverage.

2014 Strategies and Successes

In 2014, the program rolled out a set of tools to help streamline the participation process and improve the customer experience. The project estimator tool helps set customer expectations for project energy savings benefits and participation costs, and is available to interested customers, PG&E's account representatives, and participating AirCare Plus contractors. In addition to commercial customers utilizing this tool, many schools have also used this tool to successfully include AirCare Plus proposals on their applications for Proposition 39 EE funding.

AirCare Plus provided quality tune-up services to over 280 customers and 2500 packaged rooftop units across PG&E territory, saving 2.9 million kWh, 347 kW, and over 240,000 therms while providing better air quality and lengthening the life of HVAC equipment. Participants consistently described their experience as good or excellent and quality checks show a consistently high level of quality.

School Energy Efficiency Program

Implementer: CLEAResult

The SEE Program helps K-12 public schools and their contractors to identify, evaluate and implement EE retrofit measures through unbiased technical analysis, measure prioritization, and engineering support.

2014 Strategies and Successes

The SEE Program is structured as a no-cost technical assistance and support program to identify projects and see them through by working alongside the customer. With such a structure, the SEE Program can work with the school district without triggering the unique construction, bidding and wage requirements of California public school districts.

Matrix Furniture 2014 Program Highlights

- Due to the popularity of the Matrix Furniture Program, an enrollment surge occurred during the 2013-14 cycle.
- In 2014, Matrix's original 2-year program budget was doubled in order to serve the additional customers and generate additional savings.
- The program was able to expend 90% of the additional budget within four months.
- Going on its sixth year of implementing two major direct install programs with PG&E, the program has served nearly **1,000 customers** throughout the PG&E service territory.
- The program achieved savings of **17.2 GWh** and **8.4 MW** during the 2013-2014 cycle.

Casino Green Program

Implementer: Ecology Action & Nexant

The Casino Green Program provides EE retrofits to Native American-owned casinos and other non-residential related facilities. CasinoGreen is a program implemented by Ecology Action and is available throughout PG&E territory. The program offers rebates and incentives for comprehensive lighting upgrades, HVAC, refrigeration, food service, controls, hot water, natural gas, and RCx.

2014 Strategies and Successes

The program served 14 out of 32 possible casinos with Direct Install services and two casinos completed custom projects in 2014.

LodgingSavers Program

Implementer: Ecology Action

LodgingSavers offers a comprehensive list of EE measures and services specifically designed to meet the complex needs of the hospitality market. LodgingSavers is implemented by Ecology Action and Nexant and is available throughout PG&E territory. Customers with less than 400 guestrooms are eligible for turnkey Direct Install services and targeted incentive rates designed to make implementation hassle-free. Customers with a need for Customized services and those with more than 400 guest rooms are eligible to receive no cost engineering services. Our experienced implementation team guides these customers through the Customized application process in order to receive incentives in line with the Core Customized offering.

2014 Strategies and Successes

By virtue of a long program history, LodgingSavers has been able to develop strong working relationships with lodging customers, and chain customers in particular. These relationships have allowed the program to work with these customers continuously over time on multiple projects, and also identify and work with the decision makers of chain customers, which is frequently a considerable barrier to participation. This helps support the coordination and implementation of projects across hotels of the same chain. LodgingSavers completed 133 Direct Install projects and 17 custom projects in 2014.

EnergySmart Grocer Program

Implementer: CLEAResult

The EnergySmart Grocer Program provides comprehensive EE services for medium to large size grocery stores and supermarkets in the PG&E service territory. The program provides comprehensive energy audits, long-term energy planning and support for the implementation of efficiency measures. EnergySmart Grocer has been successful in engaging the grocery sector and delivered significant energy savings for customers over the last eight years. In 2014, the program delivered 20.2 million kWh and 2,383 kW savings. The program has successfully

**School Energy Efficiency
2014 Program Highlights**

- In response to **Proposition 39**, the Clean Energy Jobs Act, PG&E added the Prop 39 SEE Bonus offering to provide K-12 districts with benchmarking, energy auditing, and Prop 39 application support at no-cost.
- The offering is targeted towards smaller, understaffed schools. The program served **30 K-12 school districts** in 2014. Under-staffed schools and districts.





partnered with PG&E's account representatives to leverage PG&E's OBF Program to implement large-scale and complex retrofit projects resulting in deeper savings. On average, grocery customer projects utilizing OBF have resulted in 95 percent increase in the average measure count and 204 percent increase in average kWh savings per project. Seventy-two OBF loans were issued in 2014, totaling \$3,222,339.

Direct Install Programs

PG&E administers three Third Party programs that target small businesses in harder-to-reach markets throughout PG&E's territory.

Energy Fitness Program

Implementer: RHA

RHA is a Regional Direct Install implementer that provides SMB customers with a tailored package of basic energy efficient technology, personalized technical assistance, and direct installation of measures at no cost to participants.

RightLights Program

Implementer: Ecology Action

RightLights is a multi-lingual direct install program delivering comprehensive lighting retrofits at a low cost to small businesses. The program offers either rebates on recommended measures or installation support services for lighting retrofits and controls, vending misers, HVAC and heat pump replacement, plug load sensors, energy efficient motors, variable frequency drives on pumps and motors, HVAC door lockout, boiler replacement, refrigerator/appliance removal. The program serves customers in San Mateo, Santa Clara, Monterey, San Benito, and Santa Cruz counties. Ecology Action delivers comprehensive lighting retrofits and refrigeration measures to small and medium commercial businesses. The program offers rebates on recommended measures for lighting retrofits and controls, vending misers, energy efficient motors, strip curtains and refrigeration controls for fan motors and door heaters.

Energy Savers Program

Implementer: TEAA

TEAA is a Regional Direct Install implementer that offers free energy surveys to SMB customers in Napa, Solano, Sonoma, Mendocino and Lake Counties. The program provides technical support and incentives for implementing energy efficiency projects.

Commercial Industrial Boiler Efficiency Program

Implementer: Enovity

The Commercial Industrial Boiler Efficiency Program provides a turnkey rebate offering with no-cost technical services and rebates to identify and implement boiler and steam system efficiency projects. The program helps customers by identifying and evaluating opportunities at a facility, assisting with implementation, verifying the final results, and providing rebates and incentive checks.

K-12 Private Schools and Colleges Audit and Retrofit Program

Implementer: Matrix Energy Services, Inc.

The K-12 Private Schools and Colleges Audit and Retrofit Program provides comprehensive EE services to private preschools and K-12 schools, private colleges and universities and trade/technical schools. The program works with customers to identify both deemed and custom EE measures, provides technical analysis and recommendations, secure program



incentives and provide project implementation assistance to ensure qualified measures are installed.

Healthcare Energy Efficiency Program

Implementer: Willdan

The Healthcare Energy Efficiency Program (HEEP) provides hospital facilities (medical office buildings and acute care facilities) a wide range of support services to address the many barriers to EE and savings. HEEP delivers electric and gas savings through retrofits (deemed and calculated) and RCx services.

Small Commercial Comprehensive Refrigeration (SCCR) Program

Implementer: KEMA

PG&E's SCCR Program, implemented by KEMA (now DNV GL), an incentive program designed to provide comprehensive refrigeration energy efficiency upgrades to small- and medium-sized commercial businesses in selected areas, was closed in March 2014. Due to factors such as decreased claimable savings, higher customer co-payments, increased administrative burden and greater competition, the program was operating at a loss to the implementer, who was unable to successfully ramp up and build a robust project pipeline in the 2013-2014 program cycle. Please refer to PG&E Advice Letter 3465-G/4385-E.

Monitoring-Based Persistence Commissioning (MBPCx) Program

Implementer: Enovity

The MBPCx Program used a building automation system (BAS) to track the ongoing performance of HVAC systems and facilitate the reporting and correction of deviations from optimal performance. The program was closed in January 2015. For the 2013-2014 program cycle, the implementer was not in compliance with the terms of its contract. In addition, the program's cost effectiveness is low. For 2015, customers will be able to implement such projects through the Customized subprogram of PG&E's Statewide Commercial and Industrial programs. Please refer to PG&E Advice Letter 3539-G/4545-E.

Energy-Efficient Parking Garage Program

Implementer: EFM Solutions, LLC

The Energy-Efficient Parking Garage Program, an incentive based program for above-ground parking garages for either T8 Fluorescent or Induction lamp retrofits along with daylight controls for the perimeter fixtures, closed in September 2014. The program delivered 10 percent of its savings goal in 2013, and has not been able to develop a robust project pipeline to deliver savings in 2014. Please refer to PG&E Advice Letter 3461-G/4366-E.

Monitoring Based Commissioning (MBCx) Program

Implementer: EnerNOC

The MBCx Program, for commercial customers providing RCx and continuous commissioning activities along with continued monitoring, closed in September 2014. This program had been in place since 2010, but was not able to grow a robust project pipeline. Please refer to PG&E Advice Letter 3461-G/4366-E.

Enhanced Automation Initiative (EAI) Program

Implementer: KEMA

The EAI Program, implemented by KEMA (now DNV GL), was closed in September 2014. The program was innovative when it was started in 2004, offering free on-site assessments, technical assistance, and incentives for EMS reprogramming and/or hardware improvements to



large commercial customer. However, increased competition in the building controls sector, and market saturation have reduced the effectiveness of the program. Please refer to PG&E Advice Letter 3461-G/4366-E.

Ozone Laundry Energy Efficiency Program

Implementer: Willdan Energy Services

The Ozone Laundry Energy Efficiency Program, implemented by Willdan Energy Services, was closed in September 2014. The program offered project scoping, engineering services and project support for hospitality, healthcare and commercial customers with on premise laundry operations. Please refer to PG&E Advice Letter 3461-G/4366-E.

Commercial IDEEA365 Programs

Data Center Air Flow and Temperature Optimization Program

Implementer: CLEAResult

The Data Center Air Flow and Temperature Optimization Program (or Data Center Plus program) provides comprehensive EE offering to small and medium size data centers embedded within the customer building.

2014 Strategies and Successes

The Data Center Plus Program launched in April 2014. The Data Center Plus targets new customers with small to medium data-centers to inform them about the program and educate them on opportunities for financial and energy savings. Data Center Plus works with customers to conduct preliminary screening calls and in-depth assessments that helped the customer identify energy-saving best practices and develop specific plans of action to implement EE improvements. In response to customer feedback and recruitment challenges, Data Center Plus has adjusted the program process and requirements to remove barriers that were preventing higher program participation.

Commercial Mid-Market Program

Implementer: Lincus

The Commercial Mid-Market Program (CMMP) is focused primarily on commercial mid-market customers with peak demand between 200 kW and 500 kW.

2014 Strategies and Successes

During 2014, CMMP introduced a variety of key strategies to create a sustainable relationship with PG&E customers. CMMP qualified buildings using Lincus' Commercial Energy Audit Tool for auditing, benchmarking, and data management software to ensure that building automation system equipment costs were scalable for mid-market buildings and reduced payback for customers. In addition, CMMP provided training to qualified building maintenance personnel in

IDEEA365: Data Center Plus

2014 Program Highlights

- The program identified 18 customer leads, completed **8 screenings**, and conducted **2 on-site data center assessments**, enrolling both of these customers into the program. The program also successfully responded to multiple recruitment challenges by identifying barriers to participation and making necessary changes including:
 - Improved the project screening process to better assess the fit of potential customers.
 - Provided additional education on the program eligibility requirements and savings opportunities to ES&S representatives.
 - Revised the program Participation Agreement to allow for an extension of the installation deadline and removing the requirement that customers pay for the assessment if no project is implemented.



the mid-market segment to operate the control systems to respond to control systems events sent by the 24/7 event system in a timely manner. Furthermore, CMMP combined the EE and DR approach to make business automation systems economical and scalable.

CMMP has been able to cater to a wide array of customers such as school districts, manufacturing facilities, retail banking locations, museums and other building types. Enhanced incentives and enhanced capabilities with building automation systems is driving customers to adopt technologies that increasingly automate and extend job functionalities.

Energize Schools Program

Implementer: Strategic Energy Innovations

Energize Schools is a non-resource program, selected as part of IDEEA365, to assist K-12 schools in planning for and implementing Prop 39 energy projects while educating students and teachers in energy conservation and efficiency. Energize Schools is led by Strategic Energy Innovations (SEI).

2014 Strategies and Successes

When SEI heard of the high demand for energy audits related to Proposition 39, SEI contacted the California Conservation Corps to leverage the Corps site analysis services and deliver energy audits to the school districts faster.

Energize Schools held an energy conservation competition in fall 2014 with 47 schools from 12 different school districts participating. Students learned valuable lessons while conserving 80,500 kWh throughout the three-week period. Energize Schools assisted a dozen school districts with Prop 39 planning and student education.

Dynamic Gas Scavenging System (DGSS) Program

Implementer: Mazzetti Inc.

The DGSS program delivers energy savings and demand reduction through the installation of an interface for anesthesia machines in operating rooms.

IDEEA365 Analytics-Enabled Retrocommissioning Programs

Implementers: Enovity, Nexant, CLEAResult (RSG) and PECI

PG&E's Government and Community Partnerships team administers four AERCx programs using SmartMeter™ data analysis. As part of the IDEEA365 Third Party program solicitation, PG&E created AERCx programs that target specific parameters such as industry sector or community need and determine opportunities by processing data through Virtual Energy Assessment (VEA) software providers. VEAs use proprietary data algorithms to rank and assess sites on a large scale and effectively concentrate resources toward untapped opportunities.

The AERCx Program is one PG&E program which seeks to overcome barriers with existing building tune-up programs through SmartMeter™ data and partnerships with VEAs. Barriers to traditional tune-up programs include low program penetration among mid-sized to small commercial buildings and high costs associated with candidate site screening and assessment. AERCx is particularly innovative in identifying energy waste by uncovering how a building should operate by comparing the users consumption opposed to an efficient model under the same condition.



AERCx lowers the typical high costs associated with traditional building tune-up programs in order to reach facilities under 100,000 square feet. AERCx utilizes 15-minute interval and weather data, along with building occupancy schedules and other site-specific factors, to develop building insights based on actual energy usage patterns. Opportunities are ranked for the highest savings potential and remote building assessments are performed before stepping foot in the door.

On-site customer visits are performed to validate energy savings opportunities and ensure recommendations are in-line with customer's energy needs and priorities. Customers are presented an easy to follow remote assessment report that includes an explanation of savings potential and highlights where further investigation is needed. These remote assessments can also inform opportunities for energy efficiency outside of building tune-up measures. Following project installation, customers receive drift reports or remote analytics access for six months to support building system optimization and energy savings persistence.

Industrial and Agricultural Third Party Programs

Third Party programs represent an important delivery channel for the Industrial and Agricultural sectors. The programs offer a turnkey approach that continues to deliver savings, serve customer needs as well as stay innovative by adapting to changing market needs. In 2014, PG&E’s third party partners helped Industrial and Agricultural customers save over 72.8 GWh and 7.14 MMth.

PG&E’s 2014 Industrial and Agricultural Third Party Programs		
Industrial	Oil	Water Agencies
<ul style="list-style-type: none"> Heavy Industry Energy Efficiency Industrial Retrocommissioning Compressed Air Industrial Refrigeration Performance Plus Intelligent Energy Efficiency 	<ul style="list-style-type: none"> Energy Efficiency Services for Oil and Gas Production Refinery Energy Efficiency 	<ul style="list-style-type: none"> California Wastewater Optimization Water Infrastructure and System Efficiency
Dairies and Other Ag	Wineries & Crop Production	Food Processing
<ul style="list-style-type: none"> Dairy Industry Resource Advantage California Dairy Energy Efficiency Light Exchange 	<ul style="list-style-type: none"> Wine Industry Efficiency Solutions Program Low Pressure Irrigation 	<ul style="list-style-type: none"> Comprehensive Food Processing Audit and Resource Efficiency Process Wastewater Treatment EM Program for Agricultural Food Processing

Industrial Third Party Programs

Energy Efficiency Services for Oil and Gas Production

Implementer: EnerNOC

Energy Efficiency Services for Oil and Gas Production is a turnkey custom measure incentive program designed to deliver reliable and persistent electric savings by educating and assisting oil and gas producers and pipeline operators to take advantage of the latest technologies and processes to improve their operations to save energy and improve efficiency.

2014 Strategies and Successes

The program targets oil and gas producers of all types, providing focused assessments, calculation and documentation support, and financial incentives based on actual energy use



EnerNOC’s Energy Efficiency Services for Oil and Gas Production Program provides turnkey energy efficiency services that position oil and gas producers for high-level of energy savings and customer satisfaction.

reductions. EnerNOC’s dedicated project managers and expert engineering team work with the customer to identify, qualify, and evaluate potential EE measures. The program’s continued support allows the customer to seamlessly navigate the incentive process and stay on track to implement EE upgrades.

This program has been ongoing since 2006, and has been able to convince a risk-adverse customer base, to adopt changes through education and persistent follow through with customers to implement projects.

The program has encouraged producers to implement water isolation strategies to limit the amount of produced water that the pumping units must lift and subsequently process and re-inject back into the reservoir. In some cases, oil producers are selling the water produced in the oil extraction process to growers for use in irrigation.

The program has used a consistent approach of “boots on the ground,” often visiting our customer base to keep them engaged in the program. This continual engagement and turnkey program approach creates a high level of customer satisfaction with the oil producers participating in the program.

Heavy Industry Energy Efficiency Program

Implementer: Lockheed Martin Company

The Heavy Industry Energy Efficiency Program (HIEEP) identifies and facilitates the implementation of major process-oriented and other EE upgrades for large industrial manufacturing customers.

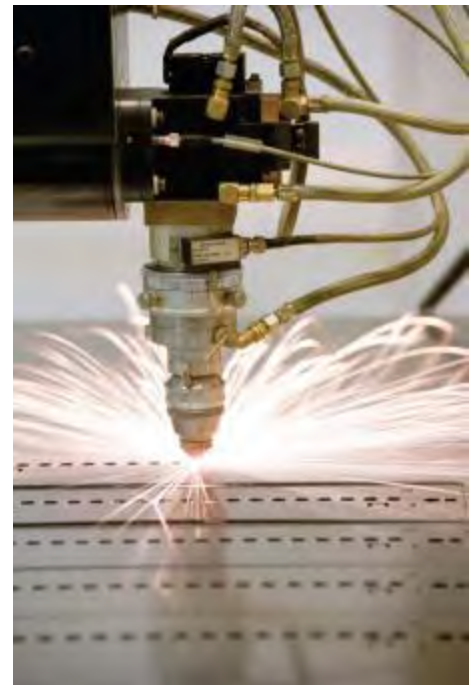
2014 Strategies and Successes

HIEEP and PG&E have worked collaboratively for years to enhance and streamline process and program flow. Through extensive use of six sigma green and black belts, HIEEP, in conjunction with PG&E have enhanced project tracking databases including automated forecasting and reporting as well as project submittal documentation. Streamlining of these tasks has greatly improved timeliness and accuracy of energy savings forecasting. Similarly, the project submittal templates improved due diligence review time by approximately one third.

HIEEP has been working very closely with the PG&E Auto DR program and has identified several projects and customers that combine EE and DR into a truly IDSM solution.

Annual customer satisfaction surveys show consistent high marks from PG&E’s end use customers with score ranging from 4.58 to 4.62 out of 5.0. One customer notes—

“Outstanding. Lockheed Martin has demonstrated an outstanding performance level in any of the four categories, quality of product or service, cost control, timeliness of performance, business relations.”



Leveraging their deep energy expertise and strong customer relationships, **Lockheed Martin’s HIEEP Program** offered IDSM opportunities for customers, increasing their energy savings opportunity.

Opportunities Moving Forward

In 2014, HIEEP worked closely with PG&E to understand, quantify and qualify projects that complied with the Commission Staff guidance. HIEEP expects 2015 and outlying years to be even more successful than the past.

Industrial Retrocommissioning Program

Implementer: Nexant

The Industrial Retrocommissioning Program (IRCx) targets the heavy industry, manufacturing and food processing sectors and generates energy savings by helping PG&E customers optimize their manufacturing processes by systematically studying low-profile energy losses that commonly occur in manufacturing facilities.

2014 Strategies and Successes

Because of the unique nature of each manufacturing and food processing plants, the IRCx Program facilitates the delivery of audits, and if needed, implementation, by subject matter experts in these types of specific disciplines. The program’s consultants and service providers allow the program to provide industries with the most comprehensive energy solutions available from their utility.

Instead of focusing on a small part of the equipment, the IRCx program optimizes whole system operations, achieving deep energy savings for the customer. For example, this includes enhancing the control systems to allow the customer a more transparent operation of their system, so that they can monitor the system and maintain the energy savings level in the future.



The **Nexant Refinery Energy Efficiency Program** helps customers overcome significant barriers to installing energy efficiency projects. Limited availability of refinery staff and capital constraints are the major barriers to overcome in project development. The program works closely with each customer providing a holistic approach and support to overcome these obstacles.

The IRCx Program is the first of its kind in PG&E’s service territory. Not only does it serve the industrial manufacturing sector rather than the commercial sector but it has built-in requirements designed to promote savings persistence. The maintenance plan can consist of either a computerized maintenance management system or a multi-year contract with a preventive maintenance contractor (typically three years) or purchasing equipment to review the operation of the system and training personnel on how to use this equipment.

During the five years of the IRCx Program, the program’s objective in working with their customers with respect to any systems and in particular with compressed air systems has always been to optimize the operations of the entire system, not an individual component that is typically the focus of a retrofit project. This approach has resulted in many more transparent, reliable and better controlled systems in manufacturing and food processing companies.



Opportunities Moving Forward

The IRCx Program sees big potential for RCx savings on food processing customers. The majority of these customers have not participated in any processing optimization programs, and their potential for energy savings is considerable, for both natural gas and electricity.

Refinery Energy Efficiency Program (REEP)

Implementer: Nexant

REEP promotes energy efficient practices in refineries and assists refinery customers in developing and implementing EE projects in PG&E's territory.

2014 Strategies and Successes

During 2014, Nexant has provided comprehensive assistance to refinery customers and PG&E account executives. This project development and implementation support has enabled the refineries to install several new projects saving a significant amount of energy. Nexant has always received very positive feedback from customers.

In fact, Nexant received great compliments from customers. One Refinery Energy Coordinator stated in a letter "I would like to thank you for the support Nexant has provided to the Refinery in 2014. You and your team of engineers have been a great help in identifying, evaluating and securing EE incentives for many projects through the PG&E program for the past several years."

Opportunities Moving Forward

The refinery sector is still one of the largest consumers of both electricity and natural gas. To date, only a limited amount of potential from these facilities has been tapped. The key to moving forward is continuous involvement with each customer and a holistic approach in providing very comprehensive project development, investigation and implementation support.

California Wastewater Process Optimization Program (CalPOP)

Implementer: QuEST

CalPOP targets wastewater treatment plants and provides facility audits, engineering assistance, project management support and incentives based on potential energy savings. Anaerobic digester optimization takes advantage of available gas savings at wastewater treatment facilities.

Industrial Refrigeration Performance Plus Program (IRPP)

Implementer: VaCom Technologies

IRPP targets refrigerated warehouses, food processors and related cooling operations that operate year-round or seasonally in the food and beverage sector, including processing, storage and distribution operations with industrial refrigeration systems. Under IRPP, existing facilities are retrofitted, emphasizing refrigeration system improvements as well as lighting, envelope, pumping, air handling and related process equipment. Whole-facility simulation is used to quantify savings and economics. Two years of web-based automated performance monitoring and associated operator education is included to provide transparency and long-term permanence of savings. IRPP provides more complex, comprehensive integrated solutions, higher savings levels and institutes a continuous improvement paradigm delivered through real-time performance monitoring and training.



Compressed Air Solutions

Implementer: *Ecova*

The Industrial Compressed Air Program focuses on industrial facilities with installed compressed air and/or pumping systems. This comprehensive turnkey program works through a network of equipment vendors and pays incentives for eligible measures including compressor and pump replacement and system optimization.

Industrial IDEEA365 Programs

Intelligent Energy Efficiency Program

Implementer: *Ameresco, Inc.*

The Intelligent Energy Efficiency Program installs monitoring equipment and sets up dashboard analysis for processing systems in industrial facilities followed by EE project implementation.

Water Infrastructure System Efficiency Program

Implementer: *Lincus*

The Water Infrastructure System Efficiency (WISE) Program focuses on the energy optimization of water and wastewater systems in California. The program targets comprehensive system optimization by targeting component improvements first and then optimizing the system as a whole.

2014 Strategies and Successes

The WISE Program launched in February 2014. The program developed water system benchmarks and project prioritization lists in order to demonstrate cost-effective EE opportunities with customers. In addition, the WISE program studied the energy intensities of various water system components and the embedded energy in customer water and wastewater systems. The program targeted system optimization projects aimed at long-term EE improvements.

In 2014, it enrolled 38 customers and is working with these customers to develop long-term system efficiency improvement partnerships. Since enrolling in the program, one customer has decided to replace all pumps within their system over the course of the next three years which is forecasted to result in over 1.2 MW of reduced load in their system.

In one example, WISE worked with a municipal water agency in PG&E service territory which provides water services to an area of approximately 10,000 acres. WISE worked with the customer and identified that by reconfiguring the system's configuration and characteristics in the models. Utilizing the modeling, the program was able to simulate an alternative operations scenario where the water demand for a specific pressure zone is met directly from the water treatment plant by a gravity feed, rather than moving through an additional booster station. Once the project is implemented, it will result in significant energy savings for the overall system.

Opportunities Moving Forward

Most water and wastewater customers show tremendous opportunities to reduce the energy consumption of their systems. Furthermore, depending on the embedded energy of their system, water conservation measures may yield significant energy savings as well. The WISE program will continue to work with these customers to develop projects.

Agricultural Third Party Programs

Wine Industry Efficiency Solutions Program

Implementer: CLEAResult

The Wine Industry Efficiency Solutions (WIES) Program provides a comprehensive approach to assisting a winery customer identify and evaluate the energy saving opportunities, and then facilitates customer action.

2014 Strategies and Successes

The WIES Program continues to align services based on winery customer goals related to energy cost reduction. Economic analysis is provided for potential equipment improvements to help understand the financial benefits associated with an upgrade so the customer is able to make an informed decision that includes the value of EE. As a comprehensive program, WIES is able to be a single resource for addressing EE needs regardless of equipment or system, which allows the development of a long-term relationship with the customer.

Cold stabilization is the most energy intensive part of the wine making process, where the refrigeration system is required to bring wine temperatures down to roughly 25°F and hold it for at least 72 hours however the entire process to achieve this temperature may take weeks. The use of a wine tank agitator reduces the refrigeration requirements for this process by mixing the wine to prevent temperature stratification therefore reducing the total time for the cold stabilization process. This measure is being actively promoted and thus far customers are pleased with the cost effective EE derived from these projects.

Vendor outreach and education has proved to be valuable source of increasing the rate of installed savings. WIES facilitated the understanding of the program and provided a simple path for leveraging EE as a selling tool among a select set of installing contractors for a deemed measure. This education and streamlining of the process proved very successful.

Opportunities Moving Forward

Closer ties to vendor networks that serve the winery market will increase the realization of energy savings in 2015 and beyond. Educating winery vendors and service providers on the benefits of leveraging EE practices and incentives will increase customer touch points related to promotion of energy reducing decision-making related to capital improvements and standard equipment purchases. This includes developing a streamlined approach for vendors to offer project proposals for evaluation and to receive feedback from the WIES Program on increasing energy savings potential. This market



An August earthquake in American Canyon, right before harvest, caused customers and vendors to turn their attention from energy efficiency related activities to focus on ensuring systems and facilities were safe and operational in time for harvest and crush activities. Major corporate winery owners suffered financial troubles, which reduced or eliminated funds allocated to energy efficiency projects. The **Wine Industry Efficiency Solutions Program** worked closely with customers through these trials to help advocate for prioritization of energy efficiency during the re-building process and beyond.

transformational approach raises increases the level of service to the winery market and will create a path to deeper savings.

Dairy Industry Resource Advantage Program

Implementer: CLEAResult

The Dairy Industry Resource Advantage (DIRA) Program provides a comprehensive approach to assisting a dairy customer identify and evaluate the energy saving opportunities and then facilitates customer action.

2014 Strategies and Successes

The DIRA Program aligns services based on dairy customer goals related to energy cost reduction. Economic analysis is provided for potential equipment improvements to help understand the financial benefits associated with an upgrade so the customer is able to make an informed decision that includes the value of EE. The dairy industry in general has traditionally been less proactive to adopt new EE technologies and methodologies. Dairymen’s primary focus is the cow health and milk production. The DIRA Program has worked over several years to establish credibility in the market and act as a single resource for addressing EE needs regardless of equipment or system, which allows the development of a long-term relationship with the customer.

Refrigeration system upgrades remain the single largest opportunity for achieving energy savings at dairy sites. Helping the market understand and embrace standard refrigeration upgrades and controls strategies, such as water-side economizers or floating head pressure controls, is somewhat of an innovative for this market and will yield significant energy savings within the dairy market. There is also real opportunity for advanced refrigeration upgrades such as replacing the standard ground water pre-cooling system and ground water condensers with a single closed loop fluid cooler and implementation of floating head pressure control strategy. Such projects have significant savings potential for both energy and water. The installation of these measures has the potential to increase in 2015.

OBF is promoted and has been well received by this market. Dairy farmers have leveraged OBF as a resource to ensure that projects move forward. The greatest success continued to be the close working relationship between DIRA and PG&E account managers who manage dairy accounts, where customer needs are shared and strategies are developed jointly to maintain a high level of customer service.

Opportunities Moving Forward

DIRA Saves Energy By Keeping Our Cows Cool

Keeping cows cool and comfortable is critical to the milk production process. Some dairymen choose to use mechanical cooling systems to create artificial breeze to maintain cow temperatures. These large banks of fans need to run during the hottest periods of the day, contributing to kW demand. Working closely with the customer and installing vendor, a major dairy operation was convinced to not only upgrade existing inefficient fans to high efficiency models, but to add fan controls which yielded considerable energy savings.





In 2015, closer ties to vendor networks that serve the dairy market would increase the realization of energy savings. Educating dairy vendors and service providers on the benefits of upselling and leveraging EE practices and incentives would increase customer touch points related to promotion of energy reducing decision-making related to capital improvements and standard equipment purchases. This is especially the case related to helping the dairy market understand and embrace standard refrigeration upgrades and controls strategies, but go a step beyond and adopt advanced refrigeration upgrades and control strategies, both of which have strong potential for providing energy and water savings.

Dairy Energy Efficiency Program (DEEP)

Implementer: *EnSave Inc.*

The Dairy Energy Efficiency Program promotes installation of energy efficient measures to small and medium sized dairy customers, and offers cash rebates for lighting, ventilation and milk processing related measures.

Light exChange Program

Implementer: *Richard Heath and Associates (RHA)*

The Light exChange Program works to identify qualifying rural customers in Agricultural communities to provide a no-cost replacement of interior and exterior lighting, HVAC, and Faucet Aerators.

Process Wastewater Treatment EM Program for Agricultural Food Processing

Implementer: *BASE Energy, Inc.*

The objective of the Process Wastewater Treatment EM Program is to assist the existing and new/expanding food processing facilities to reduce their energy and demand on their wastewater treatment facilities in PG&E's service area. Facilities include dairies, fruit beverage manufacturers, dry fruit producers, poultry farms, ice cream production plants, tomato plants, yeast production plants, and wineries.

Food Processing Program

Implementer: *EnerNOC*

The Food Processing Program is a comprehensive program designed to assist food processing customers to identify plant wide electric and gas energy savings opportunities by providing technical assistance to quantify energy savings, and help with the application process to provide cash incentives that encourage implementation of EE projects.

Agricultural IDEEA365 Programs

Low-Pressure Irrigation Efficiency Program

Implementer: *Staples Energy*

The Low-Pressure Irrigation Efficiency Program provides incentives to small and medium size growers for irrigation systems improvements that reduced system operating pressure.

2014 Strategies and Successes

Staples created an Energy Snapshot tool that utilized an iPad application to gather project, energy and water information for evaluation. This enables vendors to collect information electronically on-site so that reports can be automatically produced for customers and the program thus reducing administrative burden. Trade Allies used the Staples Energy Snapshot tool to capture grower and project information and calculate savings and incentive rebates.

Using the Snapshot tool made capturing information and customer acceptance an almost paperless process.

The program allowed Trade Allies to educate growers on many advantages of system retrofits and upgrades including how increased distribution uniformity (DU) would possibly allow them to irrigate for shorter periods of time. For example, increased DU allowed one grower to reduce the operating time for his usual irrigation from nine hours to eight hours. This one-hour reduction in irrigation time not only reduced his energy use, it allowed the grower to move the irrigation period out of peak energy use times.



Opportunities Moving Forward

Moving forward in 2015, the program is focusing efforts to incentivize energy and water savings programs under a calculated approach. The new approach will allow the Staples Irrigation Efficiency program to provide custom irrigation systems retrofits that demonstrate energy/water savings. The program will continue to work with growers closely on both energy and water needs as California growers continue to be impacted by the drought.

Staples Low-Pressure Irrigation Efficiency program worked with local irrigation suppliers across the state to create a network of 24 Trade Ally irrigation suppliers. These Trade Allies worked with growers on design specifications for their projects to make sure it lowered the operating pressure and reduced energy use. Projects often also reduced the amount of water necessary for irrigation.

Workforce Education and Training Third Party Programs

Builder Energy Code Training Program

Implementer: ConSol

The Builder Energy Code Training Program provided codes and compliance education to help builders in PG&E service territory to understand Title 24 Energy Code. The training was designed to help participants maximize their compliance rate with the code and reduce compliance costs by identifying the most cost effective compliance options and best practices. In order to make it convenient for participants, training was made available in a classroom, on-site at a job location or online via a Webinar. While the training was effective, the program was closed at the end of 2014 due to the fact that similar trainings were made available more broadly through the Statewide C&S Program. Please refer to PG&E Advice Letter 3539-G/4545-E.

Green Building Technical Support Services Program

Implementer: Build It Green

The Green Building Technical Support Services Program provided education and other tools and resources to encourage the building industry to pursue green building in California. Services included professional collaboration forums, a directory of green products and the Ask the Expert Hotline. While the program provided valued services and resources, the program was closed at the end of 2014 due to the fact that similar courses, tools and resources were



made available more broadly through the Statewide C&S Program. Please refer to PG&E Advice Letter 3539-G/4545-E.



Tables

Section 1
Energy Savings

Table 1

A	B	C	D	E	F
Table 1:					
<i>Electricity and Natural Gas Savings and Demand Reduction</i>					
Annual Results	Installed Savings (2)	CPUC Adopted Goals (2013-2015) (6)	% of Goals (Year)	% of 3-year Goals (Portfolio)	Balance (5)
2013 Energy Savings (GWh) – Annual (1)					
PG&E Programs (gross)	829	599	138%	44%	1,060
PG&E Codes and Standards Advocacy (net)	254	254	100%	33%	
2014 Energy Savings (GWh) – Annual (1)					
PG&E Programs (gross)	845	593	142%	45%	215
PG&E Codes and Standards Advocacy (net)	239	239	100%	31%	
2015 Energy Savings (GWh) – Annual (1)					
PG&E Programs (gross)		697			
PG&E Codes and Standards Advocacy (net)		283			
TOTAL Energy Savings (GWh) – Annual (3) (gross)	1,674	1,889	89%	89%	215
2013 Energy Savings (GWh) – Lifecycle					
PG&E Programs	15,011				
2014 Energy Savings (GWh) – Lifecycle					
PG&E Programs	15,184				
TOTAL Energy Savings (GWh) – Lifecycle (4)	30,196				
2013 Natural Gas Savings (MMth) – Annual (1)					
PG&E Programs (gross)	30	21	141%	53%	26
PG&E Codes and Standards Advocacy (net)	0.07	0.07	100%	4%	
2014 Natural Gas Savings (MMth) – Annual (1)					
PG&E Programs (gross)	29	20	143%	52%	(3)
PG&E Codes and Standards Advocacy (net)	0.55	0.55	100%	32%	
2015 Natural Gas Savings (MMth) – Annual (1)					
PG&E Programs (gross)		14			
PG&E Codes and Standards Advocacy (net)		1.1			
TOTAL Natural Gas Savings (MMth) – Annual (3)	59	56	105%	105%	(3)
2013 Natural Gas Savings (MMth) – Lifecycle					
PG&E Programs	372				
2014 Natural Gas Savings (MMth) – Lifecycle					
PG&E Programs	389				
TOTAL Natural Gas Savings (MMth) – Lifecycle (4)	760				
2013 Peak Demand Savings (MW) (1)					
PG&E Programs (gross)	158	114	138%	49%	167
PG&E Codes and Standards Advocacy (net)	31	31	100%	29%	
2014 Peak Demand Savings (MW) (1)					
PG&E Programs (gross)	164	100	164%	51%	3
PG&E Codes and Standards Advocacy (net)	32	32	100%	30%	
2015 Peak Demand Savings (MW) (1)					
PG&E Programs (gross)		110			
PG&E Codes and Standards Advocacy (net)		44			
TOTAL Peak Demand savings (MW) – Annual (3)	322	324	99%	99%	3

(1) All annual energy savings numbers are on a gross basis except Codes and Standards, which are net. Energy savings are based on the actual accomplishments recorded in 2013 and 2014. In Table 1 and throughout Tables 2-8 as applicable, PG&E has incorporated values provided by the Commission in the 2013-14 Lighting Disposition dated March 13, 2015, in accordance with the Memorandum (04_24_2015 Annual Report Guidance.pdf) issued by the Commission’s Energy Division on April 28, 2015.



In addition, PG&E has reduced the NTG to previously designated Hard to Reach, Emerging Technologies and Default ≤ 2 yrs measures and applied the appropriate default NTG to those claims.

- (2) Installed savings for PG&E includes Energy Savings Assistance (ESA) Program, BayREN (as reported in their 2013 and 2014 Annual Reports) and Marin Clean Energy (MCE) (as reported in their December 2013 Monthly Report and their 2014 Annual Report).
Savings also include CFLs rebated in 2010-2012 that were installed in 2013-2014.
- (3) The Total Savings reported on this table represent the gross program savings and exclude Codes and Standards, which are reported on a net basis, as adopted in D.12-05-015.
- (4) Lifecycle savings include Codes and Standards gross lifecycle savings.
- (5) The “Balance” values reflect the difference between the adopted 3-year goals and the annual installed gross savings. The negative values are a result of installed savings exceeding the adopted 3-year goals.
- (6) 2013-2014 goals as adopted in D.12-11-015; 2015 goals as adopted in D.14-10-046.



Section 2
Emission Reductions

Table 2

A	B	C	D	E	F	G	H	I
Table 2:								
<i>Emission Reductions</i>								
Annual Results	Annual tons of CO2 avoided	Lifecycle tons of CO2 avoided	Annual tons of NOx avoided	Lifecycle tons of NOx avoided	Annual tons of SOx avoided	Lifecycle tons of SOx avoided	Annual tons of PM10 avoided	Lifecycle tons of PM10 avoided
PG&E	826,832	8,441,098	209	2,482	-	-	44	417
2013 Total	826,832	8,441,098	209	2,482	-	-	44	417
PG&E	856,331	8,727,682	211	2,542	-	-	47	439
2014 Total	856,331	8,727,682	211	2,542	-	-	47	439
PG&E	-	-	-	-	-	-	-	-
2015 Total	-	-	-	-	-	-	-	-
2013-2015 3 Year Cycle Total	1,683,163	17,168,779	421	5,024	-	-	91	856

- (1) All environmental impact values are derived from gross energy savings.
- (2) Includes CFLs rebated in 2010-2012 that were installed in 2013-2014; excludes ESA Program, BayREN, and MCE.

Table 2 reports incremental environmental impacts of PG&E’s EE portfolio for 2014. The E3 calculator (version PG&E_2013_v1c6-Draft) was updated by the Commission Staff consultant for the calculation of CO₂, nitrogen oxide and particulate matter under 10 microns (PM10).

All of PG&E’s resource programs that provide energy savings contribute to the emissions reductions reported in the table above. The emissions reductions are directly related to the amount of kWh and therms saved, so the programs and strategies that were most successful in reducing emissions are the same ones that were most successful in reducing electric (kWh) and gas (therms) usage.



**Section 3
Expenditures**

**Table 3
Table 3: 2014 Expenditures (1)**

Summary of Portfolio Expenditures	Adopted Program Budget (5)	Total Annual Expenditures	Percentage of Portfolio Budget	Percentage of Total Annual Expenditures
Total 2014 EE Program Expenditures				
Administrative-Implementer	116,548,447	5,971,645	0.5%	1.6%
Administrative-IOU Support		40,517,001	3.4%	11.1%
Marketing	68,226,558	22,420,030	1.9%	6.1%
Rebates/Incentives/Direct Install (2)	497,760,182	148,021,624	12.6%	40.5%
Direct Implementation	493,273,795	148,125,721	12.6%	40.6%
Total EE Program Expenditures	\$ 1,175,808,982	\$ 365,056,021	31.0%	100.0%
Core Programs				
Administrative-IOU Support	48,396,214	25,112,894	2.1%	6.9%
Marketing	47,609,224	15,343,252	1.3%	4.2%
Rebates/Incentives/Direct Install	303,885,825	85,061,389	7.2%	23.3%
Direct Implementation	248,374,112	66,799,052	5.7%	18.3%
Sub total	\$ 648,265,375	\$ 192,316,587	16.4%	52.7%
3P Programs				
Administrative-Implementer	32,682,264	2,954,278	0.3%	0.8%
Administrative-IOU Support		8,708,469	0.7%	2.4%
Marketing	5,442,930	3,294,701	0.3%	0.9%
Rebates/Incentives/Direct Install	109,667,882	28,755,953	2.4%	7.9%
Direct Implementation	121,254,027	35,933,869	3.1%	9.8%
Sub total	\$ 269,047,103	\$ 79,647,270	6.8%	21.8%
LGP Programs				
Administrative-Implementer	35,469,969	2,223,428	0.2%	0.6%
Administrative-IOU Support		6,690,831	0.6%	1.8%
Marketing	15,174,404	1,742,851	0.1%	0.5%
Rebates/Incentives/Direct Install	83,206,475	34,204,281	2.9%	9.4%
Direct Implementation	80,529,734	29,582,989	2.5%	8.1%
Sub total	\$ 214,380,582	\$ 74,444,381	6.3%	20.4%
Non-IOU Programs (3)				
Administrative-Implementer	-	793,939	0.1%	0.2%
Administrative-IOU Support	-	4,807	0.0%	0.0%
Marketing	-	2,039,226	0.2%	0.6%
Rebates/Incentives/Direct Install	1,000,000	-	0.0%	0.0%
Direct Implementation	43,115,922	15,809,812	1.3%	4.3%
Sub total	\$ 44,115,922	\$ 18,647,783	1.6%	5.1%
EM&V				
EM&V IOU	14,430,215	2,998,052	5.8%	46.9%
EM&V Joint Staff	37,057,010	3,397,416	6.6%	53.1%
Total EM&V Expenditures	\$ 51,487,225	\$ 6,395,468	12.4%	100.0%
On-Bill Financing Loan Pool (4)	\$ 42,000,000	\$ 10,057,047	23.9%	100.0%
GRAND TOTALS	\$ 1,269,296,207	\$ 381,508,535	30.1%	100.0%



- (1) The format of Table 3 for the 2013-2015 Program Cycle has been modified from previous Annual Reports to conform with the Commission’s 2011 EE audit report recommendations and to show BayREN and MCE expenditures under “Non-IOU Programs.”
- (2) Rebates/Incentives/Direct Install include expenditures accrued but not paid as of December 31, 2014.
- (3) Non-IOU Programs represent PG&E’s payments to BayREN and MCE.
- (4) OBF Loan Pool represents loans issued and repaid.
- (5) The Adopted Program Budgets for 2013-2015 include employee benefits costs for 2014 and 2015, as approved in the GRC D.14-08-032, approved on August 14, 2014. Additionally, PG&E Advice Letter 3478-G/4435-E, approved effective June 13, 2014, authorized a fund shift from Core Programs to Non-IOU Programs (BayREN) of \$3.3 million.

Table 3.1: Pre-2013 Carryover Expenditures (1)

Summary of Carryover Expenditures	Pre-2013 Carryover	Total Annual Expenditures	Percentage of Carryover	Percentage of Total Annual Expenditures
Total Pre-2013 Carryover EE Expenditures				
Rebates/Incentives/Direct Install (2)	63,695,942	8,520,118	11.4%	90.3%
Direct Implementation	10,729,419	912,566	1.2%	9.7%
Total EE Program Expenditures	\$ 74,425,361	\$ 9,432,684	12.7%	100.0%
Core Programs				
Rebates/Incentives/Direct Install	50,187,903	8,097,373	10.9%	85.8%
Direct Implementation	4,775,000	1,071,161	1.4%	11.4%
Sub total	\$ 54,962,903	\$ 9,168,534	12.3%	97.2%
3P Programs				
Rebates/Incentives/Direct Install	8,308,038	240,821	0.3%	2.6%
Direct Implementation	5,954,419	(158,595)	-0.2%	-1.7%
Sub total	\$ 14,262,458	\$ 82,226	0.1%	0.9%
LGP Programs				
Rebates/Incentives/Direct Install	5,200,000	181,924	0.2%	1.9%
Direct Implementation	-	-	0.0%	0.0%
Sub total	\$ 5,200,000	\$ 181,924	0.2%	1.9%
EM&V (3)				
EM&V IOU	-	2,798,476	n/a	21.4%
EM&V Joint Staff	-	10,303,569	n/a	78.6%
Total EM&V Expenditures	\$ -	\$ 13,102,044	n/a	100.0%
GRAND TOTALS	\$ 74,425,361	\$ 22,534,728	30.3%	100.0%

- (1) Table 3.1 has been added to show PG&E’s authorized pre-2013 program carryover funds spent in 2014.
- (2) Incentives/Rebates/Direct Install include expenditures accrued but not paid as of December 31, 2014.
- (3) EM&V includes 2014 expenditures from all pre-2013 EE program cycles.



Section 4
Cost-Effectiveness

Table 4

A	B	C	D	E	F	G	H	I	J
Table 4:									
<i>Cost Effectiveness</i>									
Annual Results	Total Cost to Billpayers (TRC) (1)	Total Savings to Billpayers (TRC)	Net Benefits to Billpayers (TRC) (1)	TRC Ratio (2) (3)	Total Cost to Billpayers (PAC) (1)	PAC Ratio (2) (3)	PAC Cost per kW Saved (\$/kW) (4)	PAC Cost per kWh Saved (\$/kWh) (5)	PAC Cost per therm Saved (\$/therm) (5)
PG&E	\$ 657,345,873	\$ 874,044,586	\$ 216,698,714	1.33	\$ 370,389,190	2.36	\$ -	\$ 0.06	\$ 0.49
2013 TOTAL	\$ 657,345,873	\$ 874,044,586	\$ 216,698,714	1.33	\$ 370,389,190	2.36	\$ -	\$ 0.06	\$ 0.49
PG&E	\$ 592,824,809	\$ 820,896,173	\$ 228,071,365	1.38	\$ 376,117,393	2.18	\$ -	\$ 0.06	\$ 0.52
2014 TOTAL	\$ 592,824,809	\$ 820,896,173	\$ 228,071,365	1.38	\$ 376,117,393	2.18	\$ -	\$ 0.06	\$ 0.52

- (1) The cost-effectiveness calculations are based on the actual accomplishments recorded in 2013 and 2014. Includes ESPI payment of \$21.6 million recorded in 2013 per Resolution G-3491 (D.12-12-032) and \$36.3 million recorded in 2014 per Resolution G-3497 (D.12-12-032 and D.13-09-023), Codes and Standards costs and benefits; BayREN and MCE program costs (as reported in BayREN’s 2013 and 2014 Annual Reports and MCE’s December 2013 Monthly Report and 2014 Annual Report). Includes CFLs rebated in 2010-2012 that were installed in 2013-2014. Excludes ESA Program costs and benefits, Statewide Emerging Technologies Program costs, per D.12-11-015 (p. 52). Excludes Financing Program OBF Loan Pool amounts (loans issued and repaid) of \$9.7 million for 2013, and \$10.1 million for 2014, per D.09-09-047 (p. 288).
- (2) PG&E used reported project costs and incremental cost factors to calculate the cost effectiveness for non-residential retrofit customized projects.
- (3) All savings values include 5 percent market spillover in cost-effectiveness calculations per D.12-11-015, Ordering Paragraph 37, excluding Codes and Standards, and CFLs rebated in 2010-2012 that were installed in 2013-2014.
- (4) The adopted avoided cost methodology does not provide information to determine a meaningful value for PAC Cost per kW. The adopted avoided cost methodology created kWh cost values that vary for each hour of the year that includes kW generation capacity costs. The current PAC Cost per kWh includes ratepayer financial costs incurred in producing electric savings. The same costs would have to be reallocated if a PAC Cost per kW were presented. Additionally, the current approved E3 calculator does not have the capability to calculate discounted kW.
- (5) PAC cost per kWh or per therm is levelized PAC cost per kWh or therm, respectively. The current E3 calculator does not calculate levelized cost for the claims with incentive values that do not have energy savings or measure costs. Even though there are no electric or gas energy savings, the TRC and/or PAC cost is calculated only for gas for such savings claims.

Table 4 shows the various cost-effectiveness values from the TRC test and the PAC test. The cost effectiveness calculations have been performed using the E3 calculator (version identified above) with avoided costs updated by the Energy Division consultant.

The TRC ratio is greater than 1.0 and the TRC net benefits are positive, as required for the portfolio, indicating that the avoided costs of energy exceed the EE program costs and provide a net resource benefit from a broad societal perspective. The PAC ratio is greater than 1.0, as required for the portfolio, indicating that the avoided costs of energy exceed the EE program costs and have a net resource benefit from a program administrator perspective.

The energy savings and incremental costs are from the DEER database where applicable and are otherwise documented in workpapers submitted to the CPUC. The effective useful lives and net-to-gross values are taken from DEER where applicable and are otherwise documented in workpapers.



**Section 5
Bill Impacts**

Table 5

	A		B		C
Table 5: Ratepayer Impacts					
	Electric Average Rate (Res and Non-Res) \$/kwh	Gas Average Rate (Res and Non-Res) \$/therm	Average First Year Bill Savings (\$)	Average Lifecycle Bill Savings (\$)	
2014					
PG&E	\$ 0.1646	\$ 1.2480	159,891,939	1,590,964,284	
PG&E Average	\$ 0.1646	\$ 1.2480	\$ 159,891,939	\$ 1,590,964,284	

Note: Consistent with SPM TRC/PAC/RIM tests, all savings used from actuals and forecasts in this table are net, not gross.

- (1) Average first year electric bill savings is calculated by multiplying an average electric rate (as of 3/1/14) with first year net kWh energy savings.
- (2) Average first year gas bill savings is calculated by multiplying an average gas rate (as of 1/1/14) with first year net therm energy savings.
- (3) Total average first year bill savings is the sum of Notes 1 and 2.
- (4) Average lifecycle electric bill savings is calculated by multiplying an average electric rate with lifecycle net kWh energy savings.
- (5) Average lifecycle gas bill savings is calculated by multiplying an average gas rate with lifecycle net therm energy savings.
- (6) Total average lifecycle bill savings is the sum of Notes 4 and 5.
- (7) Total Average Bill Savings by Year and Lifecycle Bill Savings include Codes and Standards net savings and net lifecycle savings respectively; and excludes ESA Program, BayREN and MCE savings.

Table 5 shows the first year and lifecycle bill savings based on 2014 reported savings and PG&E’s 2014 electric and gas average rates for residential and non-residential customers. The gas average rate is calculated using PG&E’s gas procurement rate as a proxy for customers that receive gas transportation only service from PG&E.

PG&E’s notes above reflect the IOUs’ conference call with Energy Division staff on August 17, 2007 to define the data to report in this section.



Section 6
Green Building Initiative

Table 6

A	B	C	D	E	F	G	H	I	J	K
Table 6:										
<i>Green Building Initiative (1, 2)</i>										
	Expenditures (3)	Goal	GWH Annual	Goal	Goal	MW Annual	% of Goal	Goal	MMth Annual	% of Goal
2014										
PG&E	\$ 50,505,431	N/A	268	N/A	N/A	47	N/A	N/A	9	N/A
PG&E	\$ 50,505,431		268			47			9	

- (1) All energy savings are reported on a gross basis.
- (2) Does not apply to ESA Program, Codes and Standards, BayREN and MCE.
- (3) Expenditures include paid incentive dollars only.

The Green Building Initiative State of California Executive Order S-20-04 set a goal of reducing energy use in state-owned buildings by 20 percent by 2015 (from a 2003 baseline) and encouraged the private commercial sector to set the same goal. The order also directed compliance with the Green Building Action Plan, which details the measures the state will take to meet these goals.

To continue the effort of shrinking the state’s environmental footprint and save millions of taxpayer dollars, Governor Edmund G. Brown Jr. issued a sweeping executive order in April 2012 directing agencies and departments to take immediate steps to green the state’s buildings, reduce GHG emissions and improve EE. This Executive Order B-18-12 called for new or renovated state buildings larger than 10,000 square feet to achieve the U.S. Green Building Council’s LEED “Silver” certification or higher and to incorporate clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation and clean back-up power supplies.

Table 6 above shows the expenditures and energy savings in 2014 for the Governor’s Green Building Initiative (GBI). In 2014, the following programs with their respective program codes and descriptions contributed to the GBI.

EEGA_CODE	EEGA_DESCRIPTION
PGE2110011	California Community Colleges (CCC)
PGE2110012	University of California/California State University (UC/CSU)
PGE2110013	State of California
PGE2110014	Department of Corrections and Rehabilitation (CDCR)

Additional PG&E programs that supported the GBI with integrated and coordinated energy savings include Local Government Energy Watch Partnerships, Third Party Programs, and PG&E core program offerings including the Self Generation Incentive Program.

Since 2004, the California Department of Corrections and Rehabilitation, University of California, California State University, and California Community College systems have engaged with PG&E through formal EE contracts to achieve energy savings reductions and receive funding from California’s IOUs.

In 2006, PG&E entered into a Memorandum of Understanding (MOU) with the State of California and formed the State of California/IOU Energy Efficiency Partnership. The purpose of



this MOU was to provide a foundation for the IOUs to collaborate with the Green Action Team and facilitate the mutual implementation of EE projects that will assist the State of California agencies in complying with Executive Order S-20-04, and to achieve cost effective energy savings through EE retro-commissioning and retrofits of state-owned facilities.

The non-resource programs in PG&E's EE portfolio don't contribute savings but contributed significantly to achieving the goals of the GBI by introducing customers to the general benefits of EE as well as to specific measures that could increase the EE of their homes and businesses.

Education, training, and online components are offered to State of California employees through the Pacific Energy Center in San Francisco and the Energy Training Center in Stockton.

Efforts continue with all statewide partnerships and the IOUs to support reducing energy use in state-owned buildings and in support of B-18-12.



Section 7 Shareholder Performance Incentives

Shareholder earnings that were requested and approved in 2014 are from EE activities performed in program years 2012 and 2013.

The mechanism and payment associated with 2012 program activities was based on the Risk Reward Incentive Mechanism (RRIM) as approved in D.12-12-032. The RRIM calculates shareholder earnings through a management fee of 5 percent of PG&E’s audited annual utility program expenditures plus up to 1 percent for ex ante review performance (all excluding evaluation, measurement, and verification costs). PG&E’s performance score was 68 out of 100, making the final management fee 5.68 percent.¹⁴

The mechanism and payment associated with 2013 program activities was based on the Efficiency Savings and Performance Incentive (ESPI) mechanism as approved in D.13-09-023. The ESPI mechanism is a multi-component incentive structure.¹⁵ The four components contributing to earnings requested in 2014 are:

1. **Energy savings with ex ante parameter estimates:** The product of PG&E’s 2013 net lifecycle reported savings and installation rates and the adopted earnings rates coefficients, determined in accordance with Attachment 1 of D.13-09-023. Only savings from deemed measures not included on the ESPI Uncertain List are included in this calculation.
2. **Ex ante review performance:** The product of 3 percent of PG&E’s 2013 reported resource program expenditures (excluding administration costs) and PG&E’s ex ante review score determined in accordance with Attachment 5 of D.13-09-023. PG&E received a score of 63.5 out of 100.
3. **Codes and Standards advocacy management fee:** 12 percent of PG&E’s 2013 reported Codes and Standards advocacy expenditures
4. **Non-resource management fee:** 3 percent of PG&E’s 2013 reported non-resource expenditures.

The earnings requested in 2014 were approved in Resolution G-3497 in response to PG&E’s Advice Letter 3492-G/4451-E, per direction from D.12-12-032 and D.13-09-023. The table below provides the final payment awarded to PG&E for program years 2012 and 2013.

Program Year for Activities Paid	Year Incentive Requested	Authorizing Decision	Shareholder Incentive
2012	2014	Resolution G-3497	\$23.4M
2013	2014	Resolution G-3497	\$12.9M

¹⁴ Adopted in D.12-12-032.

¹⁵ Shareholder Incentive Mechanism website available at: <http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Shareholder+Incentive+Mechanism.htm>.



Section 8
Savings by End-Use

Table 8

	A	B	C	D	E	F	G	H	I
Table 8:									
<i>Annual Savings By End-Use (1) (2)</i>									
								MMTh = 1,000,000	
2014	GWH	% of Total		MW	% of Total			therms	% of Total
Residential	363	43%		72	44%			3	9%
Appliances	9	1%		2	1%			1	3%
Consumer Electronics	-	0%		-	0%			-	0%
Cooking Appliances	-	0%		-	0%			-	0%
HVAC	16	2%		9	5%			0	1%
Lighting (3)	176	21%		25	15%			(3)	-11%
Pool Pump	7	1%		1	1%			-	0%
Refrigeration	24	3%		6	3%			0	1%
Water Heating	1	0%		0	0%			0	0%
Other	129	15%		29	18%			4	16%
Nonresidential	438	52%		84	51%			23	84%
HVAC	70	8%		14	9%			3	9%
Lighting (3)	150	18%		21	13%			(0)	-1%
Office	1	0%		0	0%			(0)	0%
Process	94	11%		25	15%			12	43%
Refrigeration	33	4%		4	2%			1	4%
Other	90	11%		20	12%			8	29%
Energy Savings Assistance Program	43	5%		8	5%			2	7%
PG&E TOTAL 2014 PROGRAM SAVINGS (4)	844	100%		164	100%			28	100%
Codes & Standards Energy Savings	239	100%		32	100%			1	100%

- (1) All energy savings numbers are on a gross basis except Codes and Standards, which are net.
- (2) Includes ESA Program savings. Includes savings as provided by BayREN to PG&E on May 21, 2015, to correct savings reported in their 2014 Annual Report. Excludes MCE savings, as MCE reported net savings in Table 8 of their 2014 Annual Report; gross savings were not available. (3)
- (4) Total program savings excludes Codes and Standards as D.12-05-015 established separate annual goals for IOU programs on a gross basis, and Codes and Standards Advocacy on a net basis, as adjusted in the later Commission Decision 12-11-015.

Table 8 shows the 2014 annual savings of all programs by end use. The energy savings record by PG&E’s EE portfolio comply with the Commission’s policy rules in the Energy Efficiency Policy Manual, Version 5.0, as well as with subsequent Commission decisions and rulings.

The Energy Savings Assistance (ESA) Program energy savings reported above are from the ESA Program 2014 Annual Report provided to the Commission in May 2015. ESA measure savings are defined in D.12-08-044.



Section 9
Commitments

Table 9

A	B	C	D	E
Table 9:				
<i>Commitments (1)</i>				
Commitments Made in the Past Year with Expected Implementation by December 2014				
	Committed Funds (2)	Expected Energy Savings		
2013-2015	\$	GWH	MW	MMth
PG&E	-	-	-	-
PG&E Total	-	-	-	-
Commitments Made in the Past Year with Expected Implementation after December 2014				
	Committed Funds (2)	Expected Energy Savings		
2013-2015	\$	GWH	MW	MMth
PG&E	\$ 74,383,606	208	64	101
PG&E Total	\$ 74,383,606	208	64	101

- (1) All energy savings numbers are reported on a gross basis.
- (2) Committed Funds include incentives related to PG&E EE projects committed in prior year(s) but not completed by December 2014.

Table 9 shows the incentive commitments at the end of 2014 for EE projects that are expected to be completed after December 2014. All projects use Nonresidential Retrofit and Nonresidential New Construction calculated applications and procedures to make long-term commitments on projects that require lead times or long construction schedules. Many of these are large commercial projects, complex industrial projects, or projects with complex administrative requirements such as schools or government buildings. The Residential New Construction subprogram also receives long-term projects such as subdivisions that will be built out over several years.

In addition, a number of third party implementers and government partnerships serve larger customers and have program commitments for projects to be completed after 2014.

Appendices

Appendix A

PG&E Program Numbers

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE2100	Residential Energy Efficiency Program		
PGE21001	Residential Energy Advisor		
PGE21002	Plug Load and Appliances		
PGE21003	Multifamily Energy Efficiency Rebates Program		
PGE21004	Energy Upgrade California™ Home Upgrade		
PGE21005	Residential New Construction		
PGE21006	Residential HVAC		
PGE2101	Commercial Program		
PGE211025	Savings By Design		
PGE21011	Commercial Calculated Incentives		
PGE21012	Commercial Deemed Incentives		
PGE21013	Commercial Continuous Energy Improvement		
PGE21014	Commercial Energy Advisor program		
PGE21015	Commercial HVAC		
PGE2102	Industrial Program		--
PGE21021	Industrial Calculated Incentives		
PGE21022	Industrial Deemed Incentives		
PGE21023	Industrial Continuous Energy Improvement		
PGE21024	Industrial Energy Advisor Program		
PGE2103	Agricultural Program		
PGE21031	Agricultural Calculated Incentives		
PGE21032	Agricultural Deemed Incentives		
PGE21033	Agricultural Continuous Energy Improvement		
PGE21034	Agricultural Energy Advisor Program		
PGE2104	Lighting Program		
PGE21041	Primary Lighting		
PGE21042	Lighting Innovation		
PGE21023	Lighting Market Transformation		
PGE2105	Codes and Standards		
PGE21051	Building Codes Advocacy		
PGE21052	Appliance Standards Advocacy		
PGE21053	Compliance Improvement		
PGE21054	REACH Codes		
PGE21055	Planning and Coordination		
PGE2106	Emerging Technologies Program		
PGE21061	Technology Development Support		
PGE21062	Technology Assessments		
PGE21063	Technology Introduction Support		



Program ID	Program Name	Date Added (new programs)	Date Removed
PGE2107	Workforce Education and Training		
PGE21071	Centergies		
PGE21072	Connections		
PGE21073	Strategic Planning		
PGE2108	Statewide DSM Coordination & Integration		
PGE21081	Statewide DSM Coordination & Integration		
PGE2109	Financing		
PGE21091	On-Bill Financing		
PGE21092	Third-Party Financing		
PGE21093	New Financing Offerings		
PGE210932	Energy Financing Line Item Charge Finance Program Pilot	11/14/2014	
PGE2110	Government Partnership Programs		
PGE2110011	California Community Colleges		
PGE2110012	University of California/California State University		
PGE2110013	State of California		
PGE2110014	Department of Corrections and Rehabilitation		
PGE2110051	Local Government Energy Action Resources (LGEAR)		
PGE2110052	yResources		
PGE211007	Association of Monterey Bay Area Governments (AMBAG)		
PGE211009	East Bay		
PGE211010	Fresno		
PGE211011	Kern		
PGE211012	Madera		
PGE211013	Marin County		
PGE211014	Mendocino County		
PGE211015	Napa County		
PGE211016	Redwood Coast		
PGE211018	San Luis Obispo County		
PGE211019	San Mateo County		
PGE211020	Santa Barbara		
PGE211021	Sierra Nevada		
PGE211022	Sonoma County		
PGE211023	Silicon Valley		
PGE211024	San Francisco		
PGE21007	California New Homes Multifamily		
PGE21008	Enhance Time Delay Relay		
PGE21009	Direct Install for Manufactured and Mobile Homes		
PGE210110	Monitoring-Based Persistence Commissioning		1/4/2015
PGE210111	LodgingSavers		
PGE210112	School Energy Efficiency		



Program ID	Program Name	Date Added (new programs)	Date Removed
PGE210113	Energy Fitness Program		
PGE210114	Energy Savers		
PGE210115	RightLights		
PGE210116	Small Commercial Comprehensive Refrigeration		3/27/2014
PGE210117	Energy-Efficient Parking Garage		7/8/2014
PGE210118	Furniture Store Energy Efficiency		
PGE210119	Light Emitting Diode (LED) Accelerator		
PGE210120	Monitoring Based Commissioning		7/8/2014
PGE210122	CasinoGreen		-
PGE210123	Healthcare Energy Efficiency Program		
PGE210124	Ozone Laundry Energy Efficiency		7/8/2014
PGE210126	K-12 Private Schools and Colleges Audit Retro		
PGE210127	Innovative Designs for Energy Efficiency Approaches (IDEEA)	1/1/2013	
PGE210128	Enovity AERCx	7/2/2013	
PGE210129	Nexant ERCx	7/3/2013	
PGE210130	CLEAResult (RSG) AERCx	7/2/2013	
PGE210131	PECI AERCx	7/10/2013	
PGE210132	CLEAResult (RSG) High Efficiency Water Heater	7/2/2013	1/4/2015
PGE210133	Staples Low-Pressure Irrigation	7/2/2013	
PGE210134	ICFI Bridges To Energy Sector	1/30/2014	
PGE210135	Lincus WISE	2/5/2014	
PGE210136	McKinstry Laboratory Fume Hoods	2/7/2014	
PGE210137	Waypoint Commercial Outreach	2/5/2014	
PGE210138	PECI Data Centers	2/5/2014	
PGE210139	Energize Schools	2/24/2014	
PGE210140	Mazzetti Dynamic Gas Scavenging Systems	2/25/2014	
PGE210141	Lincus Commercial Mid-Market	2/24/2014	
PGE210142	Ameresco Intelligent Energy Efficiency Program	2/05/2014	
PGE21016	Air Care Plus		
PGE21017	Boiler Energy Efficiency Program		
PGE21018	EnergySmart Grocer		
PGE21019	Enhanced Automation Initiative		7/8/2014
PGE210310	Dairy Industry Resource Advantage program		
PGE210311	Process Wastewater Treatment Energy Management (EM) Program for Agricultural Food Processing		
PGE21035	Dairy Energy Efficiency Program		
PGE21036	Industrial Refrigeration Performance Plus		
PGE21037	Light Exchange Program		



Program ID	Program Name	Date Added (new programs)	Date Removed
PGE21038	Wine Industry Efficiency Solutions		
PGE21039	Comprehensive Food Process Audit and Resource Efficiency Program		
PGE210210	Industrial Retrocommissioning Program		
PGE21025	California Wastewater Process Optimization		
PGE21026	Energy Efficiency Services for Oil Production		
PGE21027	Heavy Industry Energy Efficiency Program		
PGE21028	Industrial Compressed Air		
PGE21029	Refinery Energy Efficiency Program		
PGE21074	Builder Energy Code Training		1/4/2015
PGE21075	Green Building Technical Support Services		1/4/2015

Appendix B

Regulatory Decisions, Rulings and Advice Letters

Regulatory Background

The following EE-related rulemakings, decisions and resolutions were issued by the CPUC in 2014.

EE Rulemaking Phase I

In 2014, the Commission completed Phase I of the *Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation and Related Issues* (R.13-11-005) that was issued on November 21, 2013. Phase I focused on approving EE funding and portfolios for 2015. PG&E filed its *Energy Efficiency 2015 Funding Proposal* on March 26, 2014. On October 24, 2014, the Commission issued approved D.14-10-046: *Decision Establishing Energy Efficiency Savings Goals and Approving 2015 Energy Efficiency Programs and Budgets*.

The Phase I Decision, as corrected by D.15-01-002 and D.15-01-023, approved PG&E's total 2015 EE portfolio budget of \$430.1 million, including \$379.3 million for PG&E's program budget, \$16.8 million for EM&V, \$12.8 million for BayREN's EE programs, and \$1.2 million for MCE's EE programs. The Phase I Decision also approved PG&E's request for \$3.3 million for 2015 DR funding for IDSM.

The Phase I Decision (at pp. 30-32) determined that 2015 is the third year of a 2013-2015 portfolio cycle, allowing the IOUs and RENs to use unspent 2013-2014 funds in 2015, to count savings from 2013-2014 towards 2015 goals and cost effectiveness, and to calculate regulatory caps and targets. The Commission directed Staff to undertake EM&V activities for 2013-2014 and 2015 combined.

The Phase I Decision (at OP 21 and pp. 31-32) leaves the 2015 programs and funding in place until the earlier of when the Commission provides superseding direction, or 2025.

The Phase I Decision (at OP 16) required the IOUs and MCE to file Tier 2 advice letters within 60 days to reflect the budget adjustments adopted in the decision, including recalculated TRC and PAC test results exceeding a 1.0 threshold for 2015. PG&E filed this advice letter on December 15, 2014, with superseding supplemental advice letters in 2015, as detailed below. The Phase I Decision also required a number of other advice letters to be filed in 2015.

Financing Pilots

In 2014, the Commission issued two Resolutions related to the implementation of the EE Financing Pilot programs that were authorized in D.13-09-044. On June 26, 2014, the Commission approved Resolution E-4663: *Resolution Approves as Amended the Seven 2013-2015 Program Implementation Plans (PIPs) for Finance Pilots Filed by PG&E, SCE, SoCalGas and SDG&E*. On September 11, 2014, the Commission approved Resolution E-4680: *Approve Amended On Bill Repayment (OBR) Tariffs for Energy Efficiency Finance Pilots to Comply with OP 11 of D.13-09-044*.



Demand-Side Management – Statewide Marketing Program

On December 4, 2014, the Commission issued D.14-12-026 – *Decision Setting Utility Budgets for the Flex Alert Program for 2015*. This decision extends funding for the Flex Alert Program in 2015 at the same level as adopted for 2014 in Application 12-08-007. The EE portion of Flex Alert expenditures are included in the cost effectiveness showing in Table 4 of this Report.

Advice Letters

PG&E filed the following advice letters related to EE in 2014. Also included below is an update for advice letters filed in 2013 that were discussed in the 2013 EE Annual Report, but not approved by the time the Report was filed:

1) Statewide Financing Pilot Program Implementation Plans (PIPs):

- On 11/19/2013, SoCalGas, on behalf of the IOUs, filed Joint Advice PG&E 3433-G/4320-E, et al., – *Implementation of Energy Efficiency (EE) Finance Program “Fast Track” Pilots in Compliance with D.13-09-044*, OP 7.a. Resolution E-4663, approved on 6/26/2014 and issued 6/27/2014, ordered the IOUs to file revisions to the off-bill repayment financing pilot PIPs filed in this advice letter.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3433-G.pdf
- On 12/19/2013, SoCalGas, on behalf of the IOUs, filed Joint Advice PG&E 3439-G/4327-E, et al., – *Implementation of Energy Efficiency (EE) Finance Program On-Bill Repayment (OBR) Pilots*, in compliance with D.13-09-044, OP 7.b. Resolution E-4663, approved 6/26/2014 and issued 6/27/2014, ordered the IOUs to file revisions to the OBR financing pilot PIPs filed in this advice letter.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3439-G.pdf
- On 7/28/2014, SoCalGas, on behalf of the IOUs, filed Joint Advice PG&E 3499-G/4464-E, et al., – *Implementation of Energy Efficiency (EE) Finance Program Pilots in Compliance with Resolution E-4663*, including revisions to the following financing pilot PIPs:

Off-Bill Repayment pilots (originally filed in Advice 3433-G/4320-E)

- 1) Single Family Loan Program
- 2) Off-Bill Small Business Lease Providers Program

OBR pilots (originally filed in Advice 3439-G/4327-E):

- 1) Master-Metered Multifamily Financing Program
- 2) Small Business Loan Program (SBLP)
- 3) On-Bill Small Business Lease Providers Program
- 4) Non-Residential Without Credit Enhancement Program

- On 10/21/2014, SoCalGas, on behalf of the IOUs, filed supplemental Joint Advice PG&E 3499-G-A/4464-E-A, et al., which replaced in its entirety Joint Advice PG&E 3499-G/4464-E, et al. The supplemental advice letter is not yet approved.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3499-G.pdf
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3499-G-A.pdf



- 2) On 12/19/2013, PG&E filed Advice 3441-G/4328-E *Implementation of Energy Efficiency (EE) Finance Program Energy Financing Line Item Charge (EFLIC) Pilot*, in compliance with D.13-09-044, OP 7.a. On 7/28/2014, PG&E filed supplemental Advice 3441-G-A/4328-E-A – *Supplement: Revisions to Energy Efficiency Finance Program Energy Financing Line Item Charge (EFLIC) Pilot in Compliance with Decision 13-09-044 and Resolution E-4663*. On 11/10/2014, PG&E filed a second supplemental Advice 3441-G-B/4328-E-B in response to Commission Staff guidance. These advice letters were approved effective 11/14/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3441-G.pdf
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3441-G-A.pdf
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3441-G-B.pdf
- 3) On 12/30/2013, PG&E filed Advice 3443-G/4338-E – *Submission of On-Bill Repayment (OBR) Rate Schedule in Compliance with Decision 13-09-044*, OP 10 and 11. On 10/13/2014, PG&E filed supplemental Advice 3443-G-A/4338-E-A – *Supplemental: Revisions to On-Bill Repayment (OBR) Rate Schedules in Compliance with Decision 13-09-044 and Resolution E-4680*. These advice letters were approved effective 11/10/2014, pursuant to Resolution E-4680 issued 9/12/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3443-G.pdf
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3443-G-A.pdf
- 4) On 1/29/2014, PG&E filed Advice 4347-E – *Request Funding to Implement Line Item Billing for Marin Clean Energy’s Energy Efficiency Financing Pilots Approved in Decision 12-11-015*. The advice letter was approved effective 2/27/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/ELEC_4347-E.pdf
- 5) On 2/28/2014, PG&E filed Advice 3461-G/4366-E – *Request for Approval to Close 2013-2014 Energy Efficiency Portfolio Third Party Subprograms*. The advice letter was approved effective 7/8/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3461-G.pdf
- 6) On 3/24/2014, PG&E filed Advice 3462-G/4381-E – *Increase in Incentive Levels for Statewide Measures Offered in PG&E’s Commercial, Industrial, Agricultural and Residential Energy Efficiency programs*. The advice letter was approved effective 4/23/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3462-G.pdf
- 7) On 3/27/2014, PG&E filed Advice 3465-G/4385-E – *Notification of Implementer Closure of 2013-2014 Energy Efficiency Portfolio Third Party Subprogram*. The advice letter was approved effective 3/27/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3465-G.pdf
- 8) On 5/21/2014, SDG&E, on behalf of the IOUs, filed Joint Advice PG&E 3475-G/4424-E – *Request to Increase Incentive Amount for San Diego Gas & Electric Company, Southern California Gas Company, Southern California Edison Company and Pacific Gas and Electric Company for their California Advanced Home Program*. On 6/24/2014, SDG&E filed supplemental Joint Advice 3475-G-A/4424-E-A – *Supplemental Data and Justification on the Incentive Structure Changes for the California Advanced Home Program Proposed for San Diego Gas & Electric Company, Southern California Gas Company, Southern California Edison Company and Pacific Gas and Electric Company*. On 7/1/2014, SDG&E filed supplement Joint Advice 3475-G-B/4424-E-B – *Supplemental: Request to Increase Incentive Amount for San Diego Gas & Electric Company, Southern California Gas Company, Southern California Edison Company and Pacific Gas and Electric Company for*



their California Advanced Home Program. The advice letter was approved effective 7/31/2014.

http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3475-G.pdf

http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3475-G-A.pdf

http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3475-G-B.pdf

- 9) On 6/4/2014, PG&E filed Advice 3478-G/4435-E – *Request Authority to Use PG&E’s Energy Efficiency 2013-2014 Program Funds to Increase Funds Available to the San Francisco Bay Area Regional Energy Network’s Multifamily Program in 2014*. The advice letter was approved effective 6/13/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3478-G.pdf
- 10) On 6/11/2014, SDG&E, on behalf of the IOUs, filed Joint Advice PG&E 3483-G/4442-E – *Request to Remove Incentive Cap to Drive Deeper Savings for the Energy Upgrade California® Home Upgrade Program of San Diego Gas & Electric Company, Southern California Gas Company, Southern California Edison Company and Pacific Gas and Electric Company*. The advice letter was approved effective 7/11/2014.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3483-G.pdf
- 11) On 6/30/2014, PG&E filed AL 3492-G/4451-E – *Request of Pacific Gas and Electric Company for 2012 and 2013 Energy Efficiency Incentive Award*. On 8/20/2014, PG&E filed Advice 3492-G-A/4451-E-A to supplement the original advice letter. These advice letters were approved, effective 12/18/2014 per Resolution G-3497.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3492-G.pdf
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3492-G-A.pdf
- 12) On 12/5/2014, PG&E filed Joint Advice 3538-G/4544-E, et al., - *Request of Pacific Gas and Electric Company, San Diego Gas & Electric Company and Southern California Gas Company to Increase the Incentive Level for a Measure Offered in the Statewide Commercial Energy Efficiency Program*. The advice letter was approved effective 1/1/2015.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3538-G.pdf
- 13) On 12/5/2014, PG&E filed Advice 3539-G/4545-E – *Request for Approval to Close 2013-2014 Energy Efficiency Portfolio Third Party Programs*. The advice letter was approved effective 1/4/2015.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3539-G.pdf
- 14) On 12/15/2014, PG&E filed Advice 3541-G/4550-E - *PG&E’s 2015 Energy Efficiency Portfolio Advice Letter In Compliance With Decision 14-10-046, Ordering Paragraph 16*. On 12/19/2014, PG&E filed supplemental Advice 3541-G-A/4550-E-A. Both of these advice letters were superseded by a second supplemental Advice 3541-G-B/4550-E B, filed on 2/25/2015. This second supplemental AL has not yet been approved.
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3541-G.pdf
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3541-G-A.pdf
http://www.pge.com/notes/rates/tariffs/tm2/pdf/GAS_3541-G-B.pdf



Appendix C

2014 Supporting Reports

In accordance with the Annual Reporting Requirements Manual, Version 4, PG&E submits the following supporting reports in Excel format:¹⁶

- Annual Report Tables (as applicable to the 2014 EE Annual Report, Sections 1-9)
- Revised December 2014 Monthly EE Program Report
- Revised Q4 2014 EE Quarterly Cap and Target Expenditure Performance and Fund Shift Report

The above reports are posted to the CPUC's Energy Efficiency Statistics website and can be accessed by going to <http://eestats.cpuc.ca.gov/Views/Documents.aspx>, and following these steps:

- In the Report Category, select Annual, Monthly or Quarterly.
- In Report Options, select PGE for Utility.

¹⁶ Attachment C to the *Administrative Law Judge's Ruling Adopting Annual Reporting Requirements For Energy Efficiency and Addressing Related Reporting Issues* in Rulemaking 06-04-010, August 8, 2007.