Pacific Gas and Electric Company®

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2015 ENERGY EFFICIENCY ANNUAL REPORT

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Executive Summary

Serving homes, businesses, agriculture and industry across the state, Pacific Gas and Electric Company (PG&E) expertly delivers energy efficiency (EE) solutions, empowering customers to eliminate unnecessary energy use, reduce their carbon footprint and save money. In 2015, PG&E continued its role as a leader in EE, delivering a dynamic and cost-effective portfolio of programs.

Through more than 10 Statewide and 50 Local programs, PG&E serves the diverse needs of more than 15 million customers across our 70,000 square mile service territory. In 2015, PG&E leveraged strategic partnerships and successful existing programs to drive deep energy savings, and continued to test and learn through innovative pilots and programs, to help customers and California meet ambitious EE and carbon reduction goals. 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 greenhouse gas emissions, with avoided annual emissions of 1,980,670 tons of carbon dioxide.

PG&E Exceeded 2015 CPUC- Adopted Savings Goals and Delivered a Cost-Effective EE Portfolio

In 2015, PG&E achieved:

- **111%** of its gross electric energy savings goal (772 gross annual GWh)
- **138%** of its gross electric demand reduction goal (152 gross summer peak MW)
- **153%** of its gross gas savings goal (22 gross annual million therms)

Codes and Standards Advocacy exceeded its 2015 goals:

- **220%** of its net electric goal (621 net annual gWh)
- **325%** of its net electric demand reduction goal (143 net summer peak MW)
- **136%** of its net therm goal (1.5 million therms)

PG&E's total 2015 EE portfolio was cost-effective, at **1.32 TRC** and **2.85 PAC**

PG&E's EE programs **avoided 1,321,268 tons of carbon dioxide in 2015**, continuing as a strong partner in helping reduce California's greenhouse gas emissions

In 2015, PG&E focused on several key initiatives to help drive deep energy savings for customers and help California meet aggressive EE and carbon reduction goals.

Helping Customers Respond to California's Drought

In response to the California drought and the Governor's water reduction mandates, PG&E coordinated with water agencies and third party partners to develop new offerings, as well as leverage an existing portfolio of EE programs to provide water and energy solutions across all sectors. As the agricultural sector was particularly hard-hit by the drought, PG&E implemented multiple strategies with the goal of helping our agricultural customers save energy and water. For instance, PG&E allocated additional funding for pump efficiency tests to support increased savings from pump overhaul projects. PG&E has increased the number of simplified incentive offerings for irrigation VFDs for the Agricultural Deemed subprogram and supported its launch with a marketing campaign. PG&E also provided assessment and development support for behavioral and informational products, which leverage new data sources and tools to help agricultural customers manage energy use.

Through our Emerging Technology (ET) Program, PG&E is assessing closed loop water management for the status evaluation of irrigation water and energy use within agricultural

farming. In 2015, $9.5 million of PG&E incentives supported investments for 1,211 agricultural 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. In addition to our agricultural customers, PG&E launched the new Simple Savings Kits – a low cost, easy solution to help our Residential customers reduce their water and energy usage. Having sold thousands already, PG&E plans to sell at least 25,000 kits through online and pop-up retail by the end of April 2016, saving over 280M gallons of water.

Developing Innovative Approaches to Capture Whole Building Savings

In 2015, PG&E continued the Commercial Whole Building (CWB) Demonstration as a proof of concept for a pay-for-performance initiative targeting deep energy savings in existing commercial buildings. CWB is notably unique in 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. The Demonstration is directed toward high-potential buildings and projects designed to achieve at least 15 percent energy savings. PG&E currently has 12 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.

Engaging Customers through the Step Up and Power Down Initiative

PG&E launched Step Up and Power Down – Commercial, a marketing campaign designed to engage owners, operators, and employees of downtown businesses in San Francisco (SF) and San Jose (SJ) in a community-wide movement to reduce energy waste. The campaign seeks to raise awareness about EE, increase customer participation in PG&E's EE programs, and examine behavioral and operational energy savings impacts in partnership with the cities of SF and SJ to reach commercial customers. Through marketing, partnerships, and face-to-face interaction, PG&E recruited 536 SF businesses and 288 SJ businesses by the end of 2015 to take the pledge to reduce energy waste. In 2015, Step Up and Power Down also launched in the three smaller cities of Redwood City, San Carlos and Woodland, to engage residential customers and help them reduce unnecessary energy use in partnership with each city's government.

Reducing Load Where It Really Counts

In 2015, PG&E continued the Targeted Demand Side Management (TDSM) initiative, a two-year long campaign working to reduce peak load on specific substations leading to deferral or reduction in distribution capital spending for residential and commercial customers. The program met its original target load reductions on three of its four targeted substations. With a total goal of 7.8 MW in savings, PG&E achieved 8.9 MW total paid savings. The final substation, Lammers/Banta, met goal in early 2016. In 2016, six additional substations are targeted for approximately 8.2MW reduction by the end of 2017.

Transforming the Plug Load Market through Innovative Industry Partnerships

Working closely with ENERGY STAR® staff and with more than fifteen other utilities and program administrators nationwide, PG&E's Residential Program team led a national expansion of the Retail Products Platform (RPP) pilot in 2015. 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 scaled up pilot, which launched in early 2016, positions California one step closer to achieving the California Long-Term Energy Efficiency Strategic Plan (the Strategic Plan) goals to reduce plug loads by 25%, and meet the State's ambitious zero net energy(ZNE) goals.

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 2015, the On-Bill Financing (OBF) subprogram continued to experience significant growth in applications and financed projects, totaling $17.8 million of financed energy efficiency projects. The financing pilots and programs provide a growing number of customers with a cost-effective tool to achieve deeper savings. The SMB customer segment saw particularly strong growth, with the number of new SMB applications increasing 22 percent (490 to 597) and 290 new SMB loans originated for $8.2 million of energy efficiency financed projects.

PG&E's 2015 Annual Report describes the full set of programs delivering cost-effective energy savings for our customers. PG&E will continue to deliver on its commitment to customers and its commitment to California to deliver cost-effective EE and GHG reduction goals through innovative pilots and program strategies, and excellence in program administration.

Annual Report Data

D.12-05-015 established annual targets for IOU programs on a gross basis and Codes and Standards Advocacy on a net basis. In 2015, PG&E achieved 772 gross annual GWh which is 111% of its electric energy savings goal; 152 gross summer peak MW which is 138% of its electric demand reduction goal; and 22 gross annual million therms which is 153% of its gas savings goal for the investor-owned utility (IOU)[1] programs. 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 greenhouse gas emissions, with avoided annual emissions of 1,321,268 tons of carbon dioxide. PG&E's total portfolio was cost-effective, with a 1.32 TRC and 2.85 PAC, including Codes and Standards advocacy. Please see Section 4 for more specifics on PG&E cost-effectiveness.

Codes and Standards Advocacy achieved 220% of its net electric goal, (621 net annual gWh), 325% of its net electric demand reduction goal (143 net summer peak MW), and 136% of its net therm goal (1.5 million therms). Codes and Standards 2015 savings exceeded the 2015 C&S savings goals for the following reasons: 1) The CPUC's 2010-12 impact evaluation found higher savings for pre-2013 standards than those assumed in the 2013 Potential and Goals Study used to set the 2015 goals; 2) The adopted 2013 Title 24 standards generate higher savings than those assumed in the 2015 goals; 3) The adopted Title 20 battery charger standards were more stringent than assumed in the 2015 goals; and 4) a few newly adopted federal standards, not included in the 2015 goals, were included in reported savings.

Total 2015 portfolio gross energy savings shown in this report include: 1) savings associated with PG&E's deemed savings program, which include Database for Energy Efficient Resources (DEER) and final approved work paper values from the 2015 customer energy savings projects; 2) savings associated with custom projects that were installed in 2015; 3) savings associated with behavioral programs that occurred in 2015; 4) savings for Bay Area Regional Energy Network (BayREN) as provided to PG&E via e-mail on April 12, 2016 and Marin Clean Energy (MCE) as reported in their December 2013 Monthly Report, 2014 Annual Report, and 2015 values as provided to PG&E via e-mail on April 12 and April 14, 2016 and 6) Energy Savings Assistance Program (ESAP) savings.

EE Decision 09-09-047 defined and D. 12-11-015 clarified the 10 percent on utility administrative cost cap, 6 percent marketing cost cap, 4 percent EM&V cost cap and direct implementation non-incentive (DINI) target of 20 percent. The 2015 EM&V budget is four percent of the program portfolio, including BayREN, MCE and Statewide Marketing, Education and Outreach (ME&O). Statewide ME&O is excluded from the marketing cap.[2] PG&E reports its progress against these caps and targets in quarterly 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 expenditure and savings reports are also posted on EE Stats

1 This 2015 EE Annual Report refers to PG&E, Southern California Edison (SCE), San Diego Gas and Electric Company (SDG&E), and Southern California Gas Company (SoCalGas), collectively as "the IOUs" or "the utilities."

2 D.13-12-038, pg. 82.

Program Descriptions and Strategies – Statewide Programs

In 2015, 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 California's Long-Term Energy Efficiency Strategic Plan goal to provide a more integrated EE experience for customers and to provide customers with access to information and greater financing opportunities. 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, and to help customers respond to California's historic drought.

This section describes the successful strategies and accomplishments employed by PG&E in 2015 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 Key Residential Program Goals

- Inspire and empower our customers to eliminate unnecessary energy use
- Serve as a "trusted energy advisor" to support customers' energy management journey
- Reduce barriers to participate in EE programs and enhance benefits of participation
- Provide 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

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 r 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. Existing residential buildings account for 32 percent of California's electric usage.[3] Two program approaches, Home Upgrade and Advanced Home Upgrade, help address this large savings potential and help customers achieve deep energy reductions.

2015 PG&E Home Upgrade Highlights

PG&E's Home Upgrade Program completed 3,645 jobs in 2015, which accounts for 46 percent of the 7,902 jobs completed statewide in 2015 by the six Program Administrators (including the regional energy networks). PG&E increased the number of jobs completed by 20 percent from 2014, while achieving an average of 22 percent site savings for Advanced Home Upgrade

[3] 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.

[2] 73 kW, 58,485 kWh and 7,466 Therms are not accounted for in this total due to an IT error affecting 267 Home Upgrade jobs.

participants. The program delivered savings of over 15.3 megawatts, 3.12 gigawatt-hours, and 49 million therms[4]. The increase in jobs performed and in customer 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. Three new software models passed CalTEST in 2015, and these more accurate and user friendly. The software models were made available on the Home Upgrade program in late 2015.

In 2015, PG&E continued the Targeted Demand Side Management (TDSM) initiative, a two-year long campaign working to reduce peak load on specific substations leading to deferral or reduction in distribution capital spending for residential customers. The program met its original target load reductions on three of its four targeted substations. With a total goal of 7.8 MW in savings, PG&E achieved 8.9 MW total paid savings. The final substation, Lammers/Banta, met goal in early 2016. In 2016, six additional substations are targeted for approximately 8.2MW reduction by the end of 2017.

CalTrack – Post Retrofit Energy Data Analysis Tool

In 2015, PG&E launched the CalTRACK development process. PG&E is leading the efforts of a technical workgroup comprised of experts from the CEC, CPUC, IOUs and other organizations. The workgroup will develop the operational methods and standards for CalTRACK. When completed, the methods and underlying coding will be open source so that all state-sponsored residential energy efficiency programs and others will be able to easily conduct their own pre-post weather normalized billing analysis in conformity with this state-sponsored system.

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 to address 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 (through November 2015), and working with other partners to drive the adoption of higher efficiency products as well as water saving measures. For example, PG&E's RPP Pilot aimed at addressing the growing number of small plug-loads on the market through a mid-stream incentive to retailers, increasing the number of energy efficient appliance models on participating store shelves in targeted categories.

Retail Products Platform

Working closely with ENERGY STAR® staff and with more than fifteen other utilities and program administrators nationwide, PG&E's Residential Program team led a national expansion of the Retail Products Platform (RPP) pilot in 2015. 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 scaled up pilot, which launched in early 2016, positions California one step closer to achieving the California Long-Term Energy Efficiency Strategic

[4] 73 kW, 58,485 kWh and 7,466 Therms are not accounted for in this total due to an IT error affecting 267 Home Upgrade jobs.

Plan (the Strategic Plan) goals to reduce plug loads by 25%, and meet the State's ambitious zero net energy(ZNE) goals.

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 applied social science.

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 and messaging that better align with the decision making of property managers and tenants.

Step Up and Power Down
PG&E's Step Up and Power Down Residential (SUPD-R) initiative is designed to drive increased awareness of PG&E's residential energy efficiency measures, to change attitudes toward energy efficiency, and to increase customer engagement and uptake in PG&E's programs. SUPD-R implementation is based on behavioral science principles, especially community-based social marketing (CBSM) and behavioral economics.

SUPD-R outreach activities include grassroots organizing, volunteerism, and leveraging local community partnerships to share experiences, resources, and support for choosing energy efficient actions in the home. In 2015, SUPD-R was launched in three cities: Redwood City, San Carlos, and Woodland, in partnership with each city's government.

Targeted Demand Side Management (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. In 2015, the program met its target load reductions on three of its four targeted substations. With a total goal of 7.8 MW in savings, PG&E achieved 8.9 MW total paid savings. The final substation, Lammers/Banta, met goal in early 2016. In 2016, six additional substations are targeted for approximately 8.2MW reduction by the end of 2017.

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

1.5 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 Account website to enable customers to track their progress as they complete the items on their plan.

2015 Strategies and Successes

In 2015, 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 300,000 new customers. Currently, 1.5 million active customers are enrolled in HER. PG&E also expanded email Home Energy Reports to over 250,000 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 over 100,000 new customers who completed the HEC well exceeding PG&E's anticipated response of 5,000 online audits.

PG&E also enhanced the HEC product with a completely new visual refresh to the online survey. The new survey was redesigned to increase engagement, completion rates and to provide more relevant tips to customers.

Plug Load and Appliances Subprogram

The Plug Load and Appliances subprogram offers rebates and incentives to customers for purchasing and installing high efficiency appliances and pool pumps, recycling inefficient refrigerators and freezers (through November 2015), 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 Retail Products Platform (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 completed the Phase 2 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 and built specific dashboards for different technologies (i.e., pool pumps, water heaters, and other technologies).

2015 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 (through July 2015), variable speed pool pumps and motors, and appliance recycling (through November 2015)[5]. The products were rebated

[5] PG&E suspended the Appliance Recycling measures in 2015 due to the main implementer going out of business. PG&E applied to sunset these measures in 2016.

through online or mail-in application processes, while refrigerators, pool pumps 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 2015, PG&E had over 106,000 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 2015, PG&E ran a highly effective marketing campaign for ARP that included an engaging television commercial, 300,000 targeted direct mail pieces and 1,000,000 targeted emails. 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 ran an in-store retail marketing campaign with 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 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.

2015 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.

Energy Upgrade California Subprogram

The Energy Upgrade California Program provides incentives for comprehensive home upgrades to residential customers in single family and multifamily homes. The program guides and

supports customers to complete comprehensive energy saving retrofits using the whole house approach.

2015 Strategies and Successes

PG&E's Home Upgrade Program has garnered much success throughout 2015, achieving a high satisfaction rate among participants, accounting for 49 percent of all Home Upgrade jobs completed in California, and achieving 22 percent average savings per participant.

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.

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. Three new software models passed CalTEST in 2015. These more accurate and user friendly, software models were made available in the Home Upgrade program in late 2015.

PG&E has continued to streamline program operations. 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. In November 2015, PG&E transitioned to a new rebate processing system, which has significantly reduced rebate processing times for participating customers.

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 response to contractor needs, PG&E developed and launched co-marketing resources for contractors. Contractors can customize these resources with their business logo and market directly to local customers.

Multifamily Upgrade Subprogram

Pacific Gas and Electric's (PG&E) Multifamily Upgrade Program (MUP) promotes long term energy benefits for affordable and market rate multifamily housing through comprehensive energy efficiency upgrades. Historically, owners and managers of multifamily properties have been less responsive to energy efficiency efforts than other residential customers. The MUP uses a tiered performance-based approach which allows property owners to make informed decisions on cost effective measures and maximize savings by conducting an energy audit, and offers incentives to offset the cost of the assessment and the improvements.

2015 Strategies and Successes

The Multifamily Upgrade Program (MUP) Incremental Path provides and alternative solution for property owners who wish to complete upgrades in phases at unit turnover, or by upgrade measure. This path helps customers extend their ability to complete a large renovation over

longer periods of time by providing some cash flow and adding flexibility to the complexity of each project timeline. This innovative solution demonstrates our efforts to meet customers where they are, while emphasizing industry leadership in this hard to reach sector.

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 highlight best practices in energy efficiency, green building and sustainability, and offers generous financial incentives to help builders and architects create environmentally friendly, energy-efficient communities for potential home buyers. 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 the State effort for new homes to reach Zero Net Energy (ZNE) by 2020.

2015 Strategies and Successes

2015 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 2014, 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.

After weathering an expected enrollment dip at the onset of implementation of the Title 24 standards which went into effect on July 1, 2014, CAHP re-engaged the market and achieved the highest annual enrollment volume in program history.

The updated program structure, using an energy use index called the CAHP Score in lieu of percent above code, was easily understood and adopted by builders and their consultants. Furthermore, a strategy to leverage the relationship between Title 24 consulting firms and their builder clients proved successful. CAHP ensured that Title 24 consultants had the tools and knowledge to directly explain program benefits to builders and thereby recruit projects on the program's behalf. Having professional consulting firms directly involved also helped to streamline process efforts.

Additionally, CAHP launched a high-efficiency lighting credit in January 2015, with 15% uptake thus far. This initial foray into non-regulated loads and a true whole-building metric is a modest but vital step towards a program that can functionally serve to support ZNE construction.

Overall, in 2015 CAHP continued to move the market towards efficient home construction, the capacity to achieve future Title 24 Code updates, and to begin to prove the potential for ZNE new construction in California two code cycles prior to the State's goal.

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 has gained increased popularity among contractors and home owners which led to treatment of over 17,000 HVAC systems; over triple the 2015 goal of 4750. The high quality technical training offered by PG&E benefitted several contractors and their staff to get updated with the best practices of HVAC maintenance and the contractor participation went up from 82 to 94. 2015 saw multiple program improvements that led to higher participation rate as well as improved customer satisfaction. It includes introduction of Efficient Fan Delay Control measure, re-introduction of Airflow correction measure, adjusting incentive levels to achieve higher savings and to ensure higher number of customers can be served under the program. Finally, by implementing combustion appliance safety evaluation and testing, the program improves customer health and safety.

The participation level in HVAC “upstream” distributor incentive and Code Compliance pilot was significantly improved by direct outreach to the HVAC distributors. For the Code Compliance pilot, Customer outreach activity through bill inserts in the Fresno area was conducted, that led to increased awareness on Code compliance and higher participation by the customers.

Commercial Program

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

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

Targeted end uses have included all Commercial sub-segments, including offices, retail facilities, restaurants, grocery stores, schools (both K−12 and higher education), lodging facilities, municipalities, health facilities, distribution warehouses, and small 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

Step Up and Power Down

Launched in May 2015, Step Up and Power Down – Commercial (SUPD-C) is a marketing campaign designed to engage owners, operators, and employees of downtown businesses in San Francisco (SF) and San Jose (SJ) in a community-wide movement to reduce energy waste. The initiative is a partnership with the cities of SJ and SF that seeks to raise awareness about EE, increase uptake of PG&E portfolio programs, and examine behavioral and operational energy savings impacts. If PG&E reaches its goals in either city (SF: 600 participants, 20 GWh saved; SJ: 400 participants, 25 GWh saved), the company will allocate $1 million in shareholder funds toward environmental sustainability and energy projects of the winning city's choice.

Step Up and Power Down established partnerships with the city of SF and SJ, the Clinton Global Initiative, Natural Resources Defense Council, Business Council on Climate Change, Building Owners and Managers Association (BOMA) SF, Market Street Association, SJ Downtown Association, Hotel Council of SF, SF 2030 District, Golden Gate Restaurant Association, Japan Town Business Association, Alliance to Save Energy, U.S. Green Building Council, International Facility Management Association (IFMA) SF, SF Chamber of Commerce, and SF Council of District Merchants Association.

PG&E hosted a kick-off event in September 2015 and has subsequently marketed the initiative in the community through bus advertisements, streetlamp signs, and website advertising. PG&E has also collaborated with the UC Berkeley Haas School of Business E2e to explore evaluation methods for potential energy savings.

Notably, through marketing, partnerships, and face-to-face interaction, PG&E recruited 536 SF businesses and 288 SJ businesses to take the Step Up and Power Down pledge by December 31, 2015.

Targeted Demand Side Management (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. In 2015, the program met its target load reductions on three of its four targeted substations. With a total goal of 7.8 MW in savings, PG&E achieved 8.9 MW total paid savings. The final substation, Lammers/Banta, met goal in early 2016. In 2016, six additional substations are targeted for approximately 8.2MW reduction by the end of 2017.

Commercial Whole Building Demonstration
In late 2013, PG&E developed and launched the Commercial Whole Building (CWB) Demonstration as a proof of concept for a pay-for-performance initiative targeting deep energy savings in existing commercial buildings. CWB is notably unique in 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. Since not all buildings or efficiency projects are suitable for this approach, recruitment for the Demonstration was conducted on an invitation-only basis and directed toward high-potential buildings and projects designed to achieve at least 15 percent energy savings. PG&E currently has 12 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 continued through 2015, with final results to be largely determined in 2016.

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

Continuous Improvement Initiatives
PG&E maintains regular collaboration with the other California investor-owned utilities (IOUs) in the interest of statewide consistency. PG&E also successfully collaborates with a wide variety of commercial EE industry stakeholders, including large commercial property management firms, architects, new construction design teams, product manufacturers, distributors, retailers, contractors, trade professionals, product-rating agencies (e.g., ENERGY STAR®, DesignLights Consortium), industry groups (e.g., Western HVAC Performance Alliance, California Commissioning Collaborative (CCC)), and loan origination agencies.

2015 Strategies and Successes

PG&E focused on several key strategies in 2015 to best position its programs to achieve the Strategic Plan vision for the Commercial sector: putting commercial buildings on a path to zero net energy by 2030, for all new and a substantial proportion of existing buildings.[6]

[6] California Long Term Energy Efficiency Strategic Plan, 2011 Update: http://www.energy.ca.gov/ab758/documents/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf

Specifically, PG&E leveraged its full breadth of program offerings to meet the needs of its diverse commercial customer base. PG&E strived to meet customers in their energy journey through its statewide subprograms dedicated to new construction, calculated, deemed and energy advisor services. Third Party programs dedicated to niche, hard-to-reach segments also supplemented PG&E's Core offerings.

Deep engagement with contractors, trade professionals, building engineers, design teams, energy service companies (ESCOs), manufacturers, retailers, and distributors has allowed PG&E to deliver a wide variety of intervention strategies to provide customers with better access to information about their energy use. This approach also helped to 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.

***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 energy journey.

In 2015, Third Party programs targeted retail, small and medium businesses, large offices, hospitals, grocery stores, and focused on a variety of technologies including HVAC, advanced LEDs, and boilers. Additional details may be found in the Third Party programs section of this report.

PG&E's Deemed lighting program continued to be successful and innovative by providing rebates for qualified lighting products in 2015. The selection of these products was further facilitated by the introduction of the statewide light-emitting diode (LED) Qualified Lighting Products list– an easily-searchable website[7] containing real-time updated database lists of qualified products from DesignLights Consortium[8] and Energy Star[9].

Much of 2015 also focused on documentation and communication of Custom program policies. To raise stakeholder awareness, PG&E authored the Customized Rulebook, a document intended to describe all of the calculation and eligibility policies that apply to Custom projects. Many stakeholders assisted in the Rulebook's development, which effectively yielded a single source that helps to educate and train readers on Custom rules and policies. This will be periodically updated to reflect current guidance and policies.

Opportunities Moving Forward

To continue to meet the State's ambitious energy savings and carbon reduction goals, and put PG&E's customers on the path to deep and persistent energy savings, PG&E will institute a number of new strategies over the next year. PG&E is introducing innovative new Deemed product offerings, including additional LED measures and measures catering to data centers and laboratory facilities.

Building upon lessons learned and best practices identified in the California Public Utility Commission's (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 Zero Net Energy (ZNE). Additional program enhancements include offering modeling approaches for tenant improvements.

7 http://caioulightingqpl.com/
8 https://www.designlights.org/QPL
9 https://www.energystar.gov/products/lighting_fans

PG&E is reshaping its Commercial HVAC Quality Maintenance offering to facilitate multiple paths for customer participation in 2016. The program design will include tiers, a one-touch tune-up and three-year maintenance agreement, for participation based on 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 Retrocommissioning (RCx) program offering to better serve smaller facilities and incorporate lessons learned and best practices from ex post evaluations and ex ante review processes.

Statewide program design and implementation offers many benefits, including making it more efficient, comprehensible, cost effective, and attractive for multi-site customers, Third Party Program providers, contractors, distributors, retailers, lenders, state and federal agencies, and other stakeholders to participate. For these reasons, PG&E will continue to prioritize coordination on statewide program design and implementation, while attending to local and regional needs of diverse customer bases, such as through the TDSM initiative mentioned earlier

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 Commercial Calculated Incentives subprogram includes both the Customized Incentives (formerly Customized Retrofit) and RCx offerings. RCx represents an important element of 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.

Strategies and Successes

In 2015, the Customized Retrofit offering within the Commercial Calculated Incentives subprogram was renamed the Customized Incentives offering. This new name sought to better represent the offering's diversity, which includes both new construction and load addition/expansion. The result was improved consistency of rules and procedures for different project types. Savings By Design remains its own offering and is unaffected by this change.

In 2015, the Customized Incentives subprogram paid incentives for 261 projects—of which 17 individual projects accounted for 55 percent of the subprogram savings by metric. Identifying, nurturing, and completing these high impact projects contributes significantly to meeting savings and cost-effectiveness goals.

PG&E has been working to improve its delivery of RCx, leveraging lessons learned and best practices from ex ante review guidance. In particular, PG&E has developed RCx-specific trainings for its engineering teams, program managers, and third party vendors. PG&E also optimized the RCx process and procedures in 2015 to deliver projects more effectively. These trainings help to align the team on policy, baselines, measures, 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.

Savings by Design Subprogram

The Savings by Design (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) is now a subset of the Customized Incentives subprogram, but it is mentioned here for clarity as a new construction offering. CNC served the commercial new construction segment for projects requiring more customized calculations, such as spaces that fall under an industry standard practice (ISP) baseline, rather than Title 24 (e.g., data centers). SBD can also serve buildings that include both Title 24 and non-Title 24 spaces.

2015 Strategies and Successes

SBD coordinated with a number of internal and external stakeholders to develop energy modeling tools to support SBD program implementation. To simplify customer participation and significantly decrease review time, PG&E incorporated alternative baselines into the modeling software methodology.

In 2015, PG&E's SBD participation rates remained steady and the program developed dynamic customer program offerings to serve customers of all sizes. The SBD program will continue to work with both Zero Net Energy (ZNE) and Codes & Standards (C&S) stakeholders to synergize efforts for future program design strategies.

Commercial Deemed Incentives Subprogram

The Commercial Deemed Incentives (Deemed) subprogram offers prescriptive rebates directly 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 segments including lighting, HVAC, food service, refrigeration, and water heating.

2015 Strategies and Successes

In 2016, 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, while distributors were also a channel used for implementing Point of Sale Instant rebates to customers purchasing qualifying products.

The program launched new prescriptive rebates for LED integrated troffer retrofit kits and electric and gas combination ovens. PG&E also identified strong market opportunity to increase food service rebates for certain ovens, fryers, holding cabinets, Demand Control Kitchen Ventilation (hood retrofits), and griddles in order to drive the food service market segment toward overcoming high capital costs to invest in new, more efficient equipment.

PG&E's Deemed subprogram continued to excel operationally in 2015. Between 2014 and 2015, kWh savings from LEDs in the Commercial Deemed program increased significantly while Linear Fluorescent volume decreased, 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 59 percent year-over-ye.

Additionally, the Deemed program exceeded all savings goals displaying applicability to small, medium, and large customers or all segments, while also showcasing its efficient, streamlined process.

As discussed above, PG&E spearheaded the launch of the statewide LED Qualified Lighting Products List, which constitutes a simple, searchable website that houses all qualified LED lighting products in an easy-to-use, automatically-refreshed interface. The website reduces costs and errors associated with identifying non-qualifying products. Additionally, the site provides a platform for continuing to list and incent products of the highest quality and efficacy, ensuring technology longevity and customer satisfaction.

Commercial Direct Install Subprogram

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

Serving Our Commercial Customers:

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

PG&E's CEI program completed four Sustainability Circle® cohorts throughout 2015, and initiated an additional two that will be completed in 2016.

The circles were comprised of 36 customers throughout Alameda, Contra Costa, San Mateo, and Sonoma counties.

Each entity presented its **sustainability action plans**, which included a total of **963 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 $11.4 million; savings of 26,184,213 kWh; an estimated $3.3 million in qualified PG&E rebates; and approximately 129 million gallons of water savings.

Continuous Energy Improvement Subprogram

The Continuous Energy Improvement (CEI) subprogram is a consultative service that targets long-term and strategic energy planning. CEI is designed to revitalize the importance of energy management by transforming the market and helping to 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.

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 greenhouse gas (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.

2015 Strategies and Successes

In 2015, the program leveraged new technology platforms to facilitate providing IDSM education, greatly increasing PG&E's ability to scale on-site integrated audit services for customers.

As part of the Energy Insight platform development, PG&E continued to update its on-site energy audit tools in Energy Insight. In addition, PG&E launched a new Commercial Universal Audit Tool designed to be more engaging, easier to complete and with more customer-specific content.

PG&E has maintained focus on building benchmarking assistance, and 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 bring about a sustainable, quality-driven market.

Strategies and Successes

Three subprogram elements comprise a comprehensive program approach and enable market transformation, direct energy savings, and demand reductions: Upstream HVAC Equipment Incentives, Commercial Quality Installation, and Commercial Quality Maintenance (C-QM).

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

As Program Administrators and active members of 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 **collaborating with a broad group of HVAC industry stakeholders**, 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 Existing Building Energy Efficiency Action Plan

Upstream HVAC Equipment Incentives

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

2015 Strategies and Successes

- Promote program to distributors 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 achieve greater savings and to move the market toward higher efficiency units.
- Use metrics to benchmark distributor performance relative to peers in order to drive competition.

Commercial Quality Installation

This offering addresses commercial installation practices to ensure that HVAC equipment is installed and commissioned in accordance with industry standards.

2015 Strategies and Challenges

- Commercial HVAC Quality Installation Contractor Education and Customer Awareness programs are based on Air-Conditioning Contractors of America (ACCA) standards.
- CPUC, IOUs, and industry stakeholders in the WHPA collaborated to validate the market transformation groundwork being laid and ensure that HVAC performance standards can be verified in the field in a sustainable manner for Commercial HVAC.
- There were enrollment challenges for 2015, despite marketing efforts using direct mail, CQM Program Implementer and word of mouth from prior students. In 2016, the team will try new approaches to reach more contractors.

Commercial Quality Maintenance

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

2015 Strategies and Successes

- Initiated redesign of program to include multiple tiers of service for customers. This will provide more flexibility for customers and less confusion in the market. New program design will be launched in 2016.
- Provided incentives for system assessment, system optimization, and continued rooftop unit maintenance based on American National Standards Institute (ANSI), American Society of Heating, Refrigerating, 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 by providing options to use the Information Technology (IT) interface, as well as providing paper questionnaires
- Redesigned contractor technician training in response to Work Order 32 (EM&V evaluation from CPUC) comments; increased contractor re-training to emphasize industry maintenance standards.
- Introduced 2,662 new units into the program

Industrial Program

California's industrial sector is extremely diverse, and in most cases are heavy energy users. Throughout 2015, 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 2015 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.

Serving Our Industrial 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 2015, Third Party programs specifically targeting oil fields, refineries, heavy industry, and food processors **completed over 200 efficiency projects** contributing 75% of segment electric energy savings achievements and 29% of segment gas energy saving achievements. *Additional details may be found in the Third Party programs section of this report.*

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 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 and scoping EE projects via its Energy Advisor Program, to financial 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 2015, PG&E supported and processed 371 Industrial projects. PG&E's Industrial programs helped customers save over 10 MW, 65 GWh, and more than 6.6 MMth. The majority of the gas savings is attributed to oil production, while electric savings are mostly credited to improved process controls along with pump and fan retrofits. 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 2015, the rate of new oil sector EE projects has continued to decrease 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 continues to play an important role in PG&E's Industrial Program – these include the MotorWise custom measure for oil field jack pumps, which was launched in 2015, and the Solar Jack measure which will complete testing in 2016. Additionally, PG&E will continue to work on development of deemed rebates for industrial customers such as a new tier to variable frequency drives (VFD) for process fans which includes Permanent Magnet AC (PMAC) Motor upgrades and Compressed Air Dryer Controllers. In addition we are educating our Sales Teams and customers through Technology Introduction Support (TIS) kits, which include fact sheets, PowerPoint decks, application slides, and an application checklist.

Currently there are TIS kits for pump VFD add-on, fan VFD add-on, submersible pump with permanent magnet motor, and condensing economizers for boilers.

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 2015 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.

2015 Strategies and Successes

As part of its Industrial Calculated Incentives subprogram, PG&E focused on direct engagement of customers by pursuing two primary strategies. First, by leveraging its team of experienced, local, and dedicated account representatives and field engineers via local workshops, trade shows and industry events. Second, continuing to develop and enhance its partnerships with industry associations and equipment vendors. PG&E was also able to use 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.

2015 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. PG&E worked with all levels of the supply chain to find the best fit for a product to make the most impact along with adding new Trade Professionals to increase our EE outreach. In addition, PG&E supported the deployment of several Emerging Technologies projects in partnership with universities to inform new measure development.

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.

2015 Strategies and Successes

In 2015, PG&E deployed a cohort model implementation approach for seven mid-sized manufacturing customers. Training and energy conservation education was provided in a classroom and online, whereby participants are provided basic and intermediate energy conservation education and best practices. Classroom and internet training is further enhanced by course proctoring and onsite support with an Energy Audit that analyzes energy use over twelve (12) months. The Energy Audit includes energy conservation recommendation(s) and overview, with opportunities specific to a participant's operation, facility and energy conservation goals.

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

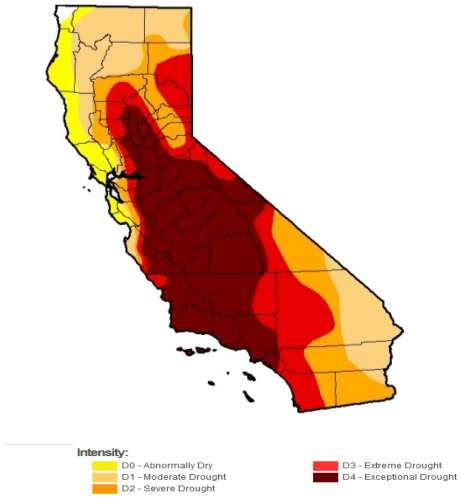
The Industrial Energy Advisor subprogram provides customer education and encourages participation in EE, DR, self-generation programs and promotes awareness of GHG and water conservation activities. The program works to assist customers in the implementation of the appropriate solutions for their business 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.

2015 Strategies and Successes

2015 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

Throughout 2015, PG&E Scaled Up its EE Programs to Assist Drought-Affected Customers Save Water and Energy



Source: United States Drought Monitor (March 2016)

In 2015, 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 2015 targeted the agricultural and food processing sectors, including agricultural growers (field crops, fruits and nut trees, vegetables and vineyards), 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 2015, 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. PG&E has increased the number of simplified incentive offerings for irrigation VFDs for the Agricultural Deemed subprogram and supported its launch with a marketing campaign. PG&E also provided assessment and development support for behavioral and informational products, which leverage new data sources and tools to help agricultural customers manage energy use. Through our Emerging Technology Program, PG&E is assessing closed loop water management for the status evaluation of irrigation water and energy use within agricultural farming.

2015 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 the League of Food Processors, 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, 4% of annual energy use statewide, and $54 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 2015, $9.5 million of PG&E incentives supported investments for 1,211 agricultural 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 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.

2015 Strategies and Successes

- The Statewide Agricultural Calculated Incentives Program provided incentives for 148 completed projects, with incentives ranging from less than $2,000 to nearly $230,000.
- 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.

2015 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 2015, PG&E processed and paid over 90 custom VFD projects with an average incentive of $5,000. The Deemed Program offers a better use of program administration costs for this high volume measure, while enabling a simpler customer experience.

Through PG&E's Deemed Incentive Program, 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 Advanced Pumping Efficiency Program (APEP), which offers pump tests and incentives for pump efficiency improvements to agricultural, municipal, and irrigation district customers.

2015 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 60 percent compared to 2014. Through APEP, 205 agricultural producers received incentives and delivered 79% of the energy savings through pump efficiency projects. Water agencies and irrigation districts contributed the remaining 21 percent of calculated savings as verified by pre-project and post-project pump efficiency tests.

What's more, PG&E met its 2015 goal to increase program participation from throughout the territory.

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.

2015 Strategies and Successes

The 2015 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 and one agricultural customer participated in a separate CEI program designed for all customer types. Over the course of a six-month consultative training program, customers prepared and presented action plans, each including at least two energy efficiency projects.

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 2015, a significant accomplishment of the Statewide Lighting Program was its contribution to continuing to transform 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, and nearly 100 by the end of 2015.

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

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. A targeted email campaign ran from November 2014 through January 2015 and participating retailers saw an 83% increase in sales compared to the prior three months, with sales sustaining throughout 2015 as the labeling remained in market.

PG&E successfully launched a Lighting Design Assistance (LDA) Trial through its Lighting Innovation subprogram. This Trial will test the impact of Lighting Design Professionals (LDPs) to influence increased energy savings of lighting projects. Participating LDPs will receive an incentive for presenting ultra-efficient lighting designs that have a Lighting Power Density (LPD) ≤0.5 Watts/Square Foot. Participating customers will receive an additional incentive should they implement the project according to the specified lighting design. This Trial will run through 2016.

Strategies and Successes

The Statewide Lighting Program focused solely on advanced lighting in 2015, however in response to guidance provided in D.14-10-046 that indicated "in 2015, administrators should continue to capture the remaining market potential for CFLs reflected in the most current potential study, and target hard-to-reach markets," PG&E incentivized basic CFLs to Hard-to-Reach (HTR) customers up to the allowed 25% cap (as determined by kW/kWh). PG&E continued to spend the majority of its remaining Primary Lighting incentive funding on advanced lighting, both LEDs and advanced CFLs, with approximately 87 percent of its Primary Lighting

incentive funding on advanced LEDs. To reinforce support for the most efficacious and innovative products, and to improve the cost effectiveness of its lighting offerings, PG&E updated the incremental measure costs for its LED work papers, and is investigating alternative calculation methods working collaboratively with the statewide team and Commission staff for future work paper updates.

In 2015, PG&E transitioned its Lighting Innovation subprogram from a resource to non-resource subprogram, enabling it to run Trials that test lighting program/product concepts that do not directly contribute to the portfolio's overall portfolio savings goals.

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 is conducting Lighting Innovation trials on an Advanced Lighting Control System Calculation Tool and a Lighting Design Assistance Program concept.

California's Long-Term Energy Efficiency 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. At the LAP Meeting in October 2015, CPUC Staff highlighted PG&E's contributions to Goal 2, Strategy 3[10] of the LAP. In 2015, PG&E made significant progress on the Advanced Lighting Control System (ALCS) Calculator Tool, a key initiative as part of the Statewide Lighting Program's efforts to advance the adoption of ALCS and a reliable method to quantify savings associated with ALCS.

Opportunities Moving Forward

Building on 2015 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, and expanding delivery channels for non-residential LED products.

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.

2015 Strategies and Successes

2015 marked the second full year of solely supporting LED lamps that met the new advanced LED specification as designed by the CEC. The program saw a steady increase in product availability from the prior year.

[10] Goal 2 of the lighting chapter: "Define and advance best practices for design, installation, operation and maintenance of integrated systems to achieve sustainable lighting solutions for all space." Strategy 3 related to Goal 2: Identify best practice lighting technologies and systems and incorporate into utility programs."

The number of qualified LED lamp models went from 1 to 50 from 2013 to 2014 due to the rigorous outreach to manufacturers and engaging them in the testing/qualification process early on. With this increased manufacturer confidence in the CEC Spec, the number of qualified LED lamp models increased to nearly 100 across 17 manufacturers by the end of 2015.

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 2.5 million advanced LEDs through its Primary Lighting subprogram in 2015.

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.

2015 Strategies and Successes

PG&E focused on developing two key Trials in Lighting Innovation – the Lighting Designer Assistance (LDA) Trial and the Advanced Lighting Control System (ALCS) Calculator Trial. The LDA Trial was launched in November 2015 and the ALCS Calculator Trial is targeted to launch in Q2 2016. These Trials contribute towards PG&E's approach to support Goal #2 of the Lighting Action Plan to "define and advance best practices for design, installation, operation and maintenance of integrated systems to achieve sustainable lighting solutions for all spaces." Each of the CA electric IOUs is targeting different aspects of ALCS; PG&E's contribution with the ALCS Calculator is intended to enable to simplified savings estimation for various advanced lighting control strategies.

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.

2015 Strategies and Successes

The Lighting Activity Workbook (LAW) was updated to provide the IOUs with a database of activities (e.g. incentives, work papers, studies, projects, etc.) across a wide selection of energy efficiency organizations across the United States and Canada to assist in Program planning. The efficiencyforward.com website was updated to provide a user-friendly format for viewing these activities.

PG&E played an active role in 2015 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, 2016 LMT Annual Report.

Codes and Standards

The Statewide Codes and Standards (C&S) Program saves energy on behalf of ratepayers by influencing standards and code-setting bodies, such as the California Energy Commission (CEC) and the U.S. Department of Energy (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.

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

Key Initiatives

Throughout 2015, PG&E collaborated with the CEC to complete work on the 2016 building code cycle, including adopting of 2016 Building Energy Efficiency Standards in June, and adoption of the Revised 2016 Lighting Alteration Provisions in November. In addition, PG&E commenced research in support of the 2019 code cycle.

PG&E supported new appliance efficiency standards at both the state and federal levels. New Title 20 Appliance Efficiency Regulations included water appliances in response to California's drought. New DOE final rules were adopted for three (3) measures in 2015: (1) General Service Fluorescent Lamps; (2) Automatic Commercial Ice Makers; and (3) Single Package Vertical Air Conditioners and Heat Pumps. Additionally, the DOE Appliance Standards and Rulemaking Committee (ASRAC) Working Groups, of which PG&E was a member, adopted five final term sheets on: (1) Commercial HVAC products, (2) Commercial Fans and Blowers, (3) Walk-in coolers and freezers, (4) Miscellaneous refrigeration products, and (5) commercial warm air furnaces.

The C&S Program team continued to support 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 adjustment factors[11] 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.

Increased scrutiny on the Codes & Standards Enhancement (CASE) studies has required additional data collection. These efforts have included field studies, product testing, test procedure creation and case studies. This has resulted in stronger CASE studies and more stringent standards.

Implementation Challenges

Increasing scrutiny by stakeholders to CEC and DOE rulemakings continues to compel increasing rigor to achieve success. The additional rigor is achieved by increasing research (lab testing, field surveys, etc.) which increases costs. The complexity of building codes and the number of appliance standards continues to increase. DOE standards for new product categories continues to increase preemption of state appliance standards and constrain prescriptive baselines for building codes, thereby limiting opportunities for California to require increased cost effective savings.

The 2013 Title 24 Code that became effective 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.

The CEC made the decision early in the 2013 Title 24 Code update to implement a new platform for modeling buildings. This new platform California Building Energy Code Compliance Residential (CBECC-Res) and California Building Energy Code Compliance Commercial (CBECC-Com) for residential and commercial buildings was a major change for the industry. Title 24 Code complexity necessitates many additional job aides such as fact and trigger sheets[12] to explain code intricacies to users.

There was push back from industry on nonresidential lighting standards triggered by remodels, additions, and gut rehabilitations. The requirements generate cost effective savings but were new and changed the normal practices of lighting retrofit contractors.

In addition, there was also strong push back from the nonresidential lighting retrofit industry on the lighting alterations provisions. This industry used the 2016 Title 24 rulemaking (Docket #2104-BSTD-01) to propose changes to the code. PG&E worked with industry and the CEC to develop new options that were ultimately adopted into the 2016 Title 24 code. Moving forward, PG&E will need to work closely with the CEC and others to help ensure these new options are implemented correctly.

[11] Compliance adjustment factors account for buildings that exceed minimum code requirements on a whole building basis.

[12] A trigger sheet is a reference document that indicates the retrofits that require a building permit.

The audience requiring Title 24 Standards training has increased and now includes architects and designers, commissioning agents and acceptance test technicians, electric distribution inspectors. Increased training modules are required.

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. Looking ahead, code simplification will be increasingly important.
- New reach codes may be developed based on 2016 building codes now that software has stabilized.
- In addition to further expansion of Title 24 training, tools, and EnergyCodeAce.com capabilities, significant energy savings may be achieved by continuing to expand support for appliance standards.
- Involving Compliance Improvement during the initial advocacy stage of Title 24 code development will result in improved compliance rates and smoother implementation.

Statewide Codes and Standards Subprograms

Appliance Standards Advocacy Subprogram

The Appliance Standards Advocacy subprogram targets both state and federal standards and test methods including 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 ASHRAE, and the Federal Trade Commission. Advocacy activities include developing Title 20 code enhancement proposals, participating in the CEC public rulemaking process, participation in ASHRAE committees, 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.

2015 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,”“Phase 2”, and “Phase 3” topics rulemaking.
- Developed and submitted response to CEC’s invitation to participate, a data request, for 18 products including 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 1 Title 20 CASE study to the CEC on shower heads.
- Facilitated industry and advocate stakeholder meetings for all topics:
  - Video Displays
  - Game Consoles
  - Computers

- 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 53 rulemaking advocacy letters issued in 2015. The results of these efforts will be determined in future years.
- IOU Advocacy letters issued in previous years influenced rulings on six Federal Measures taking effect in 2015: (1) Small Electric Motors; (2) Residential Central Air Conditioners; (3) Residential Clothes Dryers; (4) Residential Clothes Washers; (5) Residential Water Heaters; and (6) Residential Weatherized Gas Furnaces.
- 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.

2015 Strategies and Successes

- Supported post-adoption prerequisites to improve future implementation of 2016 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.
- Commenced analysis of potential measures in preparation for the 2019 Title 24 code cycle.
- Conducted efforts to harmonize state and national building codes. Activities included a

The C&S Team commenced preparations for the 2019 code cycle to ready itself for expected CEC proceedings

Activities included developing, coordinating, projects that are collecting energy savings, cost-effectiveness and feasibility information for new heating and cooling technologies, including hydronic systems and mini-splits as well further improvements to building envelope air quality and water heating.

These measures are critical for achieving **ZNE-ready low rise residences by 2020**.

The Team will work closely with the CEC staff to identify and **prioritize EE measures** for the 2019 Title 24 standards development.

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.
- Proposed lighting control credits for Institutional Tuning for ASHRAE 189.1 in parallel to recommending a similar Institutional Tuning lighting Power Adjustment Factor for the 2016 T-24 standards. Addressing issues raised by stakeholders in the ASHRAE process and approval by the ASHRAE committee assisted in securing CEC staff's support for this measure. This ASHRAE 189.1 green building standard also adopted bi-level parking lot lighting controls similar to those in the 2013 Title 24 which eased adoption of this measure into ASHRAE Standard 90.1 (Energy Standard for Buildings Except Low-Rise Residential Buildings).
- The C&S team has also been working with the national energy code development process to assure that daylighting code requirements are aligned between the two ASHRAE building standards and Title 24. In conjunction with Pacific Northwest National Laboratory (PNNL), the C&S team was involved in developing requirements in ASHRAE 189.1 and 90.1 for card key or occupancy control of lighting, HVAC and ventilation of 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.

2015 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 Self Studies: Provide opportunity for building industry to complete training at their convenience
  - Virtual Classes: Instructor-led, interactive, web-based classes eliminating travel time and expenses
- Customized delivery of traditional classes for larger building departments such as City of Los Angeles, and the City of San Francisco in collaboration with BayREN. Developed and maintained tools to aid compliance improvement practitioners in implementing the code:
  - Navigator Ace: Provides a step-by-step guide to the Title 24, Part 6 compliance process
  - 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
- Expanded outreach efforts to increase consumer and building industry's awareness of code requirements, and the EnergyCodeAce website through participation in over 30 industry events reaching more than 31,000 total participants. 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
    - Infographics
    - 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 and transformed more than 20 prescriptive compliance forms to an electronic format 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.
- Finalized and administered 2013 residential and nonresidential Certified Energy Analyst exams resulting in over 160 CEAs to date.
- Taught CASE authors and CEC to apply user-centered design approach when developing 2016 compliance manuals

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. Reach Codes 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 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.

2015 Strategies and Successes

- Worked with local jurisdictions to prepare the way for adoption of codes that exceed 2016 Title 24 as part of the normal three year cycle of local jurisdiction adoption of California Uniform codes.
- 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 all 16 Climate Zones.

- Working with the CEC, the CALGreen ZNE Tier was developed which will be the basis of 2016 Reach Codes including ZNE. Key to the ZNE tier is the Energy Design Rating which calculates the Time Dependent Valuation (TDV) all energy consumed or exported by the building. The Energy Design Rating is an extension of the Title 24 performance method simulation software, CBECC-res. The C&S team has been gathering supporting information and participating in algorithm development for this simulation tool.

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.

2015 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 Program

The Emerging Technologies Program (ETP) is a statewide initiative designed to reduce time-to-market for introduction of Energy Efficiency (EE) technology solutions aligned with the California Energy Efficiency Strategic Plan (CEESP). It supports the aggressive objectives of California investor-owned utility (IOU) EE programs by increasing supply of and market demand for EE technology solutions, delivered through three core subprograms: Technology Development Support (TDS), Technology Assessment (TA), and Technology Introduction Support (TIS).

Under the statewide ETP, the TDS subprogram intends to increase technology supply by further educating the private sector (i.e. technology providers, investors, etc.) on technical and programmatic requirements for rebated EE measures. In parallel, the TA subprogram identifies and assesses the performance of emerging EE technology solutions in all sectors that may be offered to customers with an incentive. Finally, the TIS subprogram seeks to introduce solutions to the market by exposing end users to applications of emerging EE technology solutions in real-world settings, and by harnessing third party projects to deploy such technology solutions on a limited scale in the market.
ETP uses numerous strategies − such as Lab Testing, Field Testing, Demonstration Showcases, and Technology Resource Incubator Outreach (TRIO) − to achieve the objectives of its three subprograms. While select key attributes of aforementioned strategies are described in the sections below, any ETP strategy may in fact be used to achieve any of the subprogram objectives.

Testing Innovative Solutions through the Emerging Technologies Program

PG&E's Emerging Technologies (ET) team actively seeks out **new, innovative technology solutions** and market approaches, soliciting ideas from both internal and external EE stakeholders to assess new ideas PG&E's EE portfolio in a strategic way. ETP enables PG&E to **test and benchmark new and innovative products**, **services, and market solution** to help bring our customers new and improved opportunities to save energy.

Methodology

ETP enables PG&E's EE team to reduce certain market risks by testing and benchmarking new and innovative products, services, and market solution approaches. This helps downstream programs to understand potential barriers – technical or non-technical – to high adoption rates for new EE technology solutions. ETP, via the flexibility that it provides to test new market solutions, aligns itself well with one of PG&E's core EE values of "embracing the art of the possible."[13]

PG&E's Emerging Technologies (ET) team actively seeks out new, innovative technology solutions and market approaches, soliciting ideas from both internal and external EE stakeholders. For each new idea submission, the team ranks the potential ETP project based on several factors including internal and external goals, strategic fit and market opportunity. A final

[13] PG&E Energy Efficiency Mission 2015-

management review for all the highly ranked (i.e. strongly recommended) ideas occurs several times over the course of a given year to create the final set of ET projects that will be funded for a particular solicitation period.

Emerging Technologies Subprograms

Technology Development Support (TDS) Subprogram

The TDS subprogram assists entrepreneurs, investors and technology providers in developing new or improved EE technologies and solutions for the marketplace. IOUs are strongly positioned to undertake targeted, cost-effective activities that provide value in support of private industry product development efforts, decreasing innovator uncertainties. Broadly, the ETP seeks targeted opportunities to support EE product development. Product development constitutes the process of taking an early-stage technology or concept (including at the Research and Development (R&D) stage) and transforming it into a product that meets a market need. ETP supports product development through TRIO roundtables, symposia, and other means. TRIO provides support and networking for EE and DR entrepreneurs, investors, and universities with the goal of providing participants with the requisite perspective and tools to work with IOUs. TRIO symposia educate technology developers about the requirements that IOUs must apply when considering new technologies and solutions for inclusion in IOU EE programs. TRIO roundtables are targeted to a smaller audience and have focused on market demand and technological innovation, prior to a full ET assessment (see below). Supplementary to TRIO support, market and behavioral studies investigate the market potential for early-stage technologies and solutions. Ultimately, the aim of the TDS program is to communicate and collaborate with entrepreneurs and technology providers to increase the supply of EE technology solutions, including breakthrough technologies and highly disruptive innovations, to the market.

Technology Assessment (TA) Subprogram

Through the TA element of ETP, energy efficient technology solutions that are either new to the market or underutilized for a given application are evaluated for performance claims and overall effectiveness – namely cost, and end customer attractiveness – in reducing energy consumption and peak demand. Two key objectives of these assessments include 1) the adoption of new measures into PG&E's EE portfolio, and, 2) the deeming of specific technology solutions as *not* market ready. Historically, technology assessments have been a core strength of ETP and have provided critical support to EE programs. ETP assessments may utilize data and information from different sources to support assessment findings, including: in-situ testing (customer or other field sites), laboratory testing, or paper studies. In addition to other findings and/or information, assessments typically generate some − and in rare cases, all − of the data necessary for EE rebate programs to construct a work paper estimating energy and demand savings over the lifetime of the measure. Furthermore, technology solutions that are designated as 'not market ready' nonetheless intend to assist technology providers in enhancing their offerings for the EE marketplace.

Technology Introduction Support (TIS) Subprogram

The TIS subprogram supports the introduction of new technology solutions to the market, albeit on a limited scale, through several activities. Scaled Field Placement (SFP) projects are the deployment of a technology solution at multiple, participating customer sites as a key step to gain market traction and feedback. Typically, such measures have already undergone a technology assessment or similar evaluation to minimize the risk of failure. Demonstration and

Showcase projects are designed to provide key stakeholders the opportunity to thoroughly vet and understand the value of proven technology solutions that advance Zero Net Energy (ZNE), Integrated Demand Side Management (IDSM), and other CEESP strategic goals. The overall aim of demonstration showcases is to introduce technology solutions to stakeholders from a systems and potentially integrated level rather than an individual (widget-based) perspective using data gathering and customer feedback in a non-simulated environment. In addition, the demonstration showcase exposes the technology solution to the broad public, investors, entrepreneurs and technology professionals, and increases market knowledge for the technology provider. 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 and acceptance of new technology solutions and business models, as well as market readiness and potential for new EE measures. Finally, the Technology Resource Innovation Program (TRIP) solicits third-party projects − of up to $300,000 per project − to deploy emerging technologies on a limited scale to the market.

2015 Highlights

2015 was a particularly successful year for the PG&E ETP. The Program met, and in some categories exceeded, all its regulatory goals and requirements. Goals were successfully met with the number of TIS (eight) and TDS (two) projects initiated, as well all the TRIP RFP and TRIO Symposium outreach event to be conducted. PG&E exceeded its goals in the number of TAs we successfully initiated (goal of 8, 10 initiated) and most importantly, the number of measures that were transferred to or helped inform programs (goal of 2, with 6 adopted measures across 3 assessed projects).

PG&E helped the statewide IOU ETP team host a TRIO symposium in 2015 on “Innovative Technologies for the Portfolio,”[14] which sought to educate investors, entrepreneurs, academia and other technology professionals on the following core elements of how to partner with utilities for bringing to market new EE technology solutions:

1. Requisite guidelines for becoming an EE technology partner with utilities
2. How to target and attract customers with EE technology
3. Highlight existing collaboration between utilities and select leading vendors via the Emerging Technologies Coordinating Council (ETCC), as a paradigm to follow

At the TRIO symposium, PG&E and the other IOUs provided an overview of funding solicitations for innovative programs to which attendees could apply and take advantage of having their solutions assessed for technology and/or market readiness. Immediately following the TRIO symposium, PG&E ran its innovative TRIP solicitation and was successful in attracting 17 abstracts from new and existing technology vendors with emerging solutions that PG&E could help bring to market.

In addition to the TRIO Symposium, the statewide IOU ETP team held ETCC Open Forums, where approximately fourteen developers and entrepreneurs of EE technology solutions had an opportunity to pitch their products to the ETP team. The IOUs provided real-time feedback to the technology developers on developing or improving new features and capabilities that represent future areas of opportunity in EE program delivery and implementation. Conversations are

[14] http://www.etcc-ca.com/event/trio-symposium-innovative-technologies-portfolio

ongoing with a subset of presenters on further engagement for collaborative ETP projects to assess their solutions.

In order to demonstrate ET's role in helping to achieve the long-term CEESP goals, PG&E successfully completed two residential ZNE Demonstration Showcase projects in 2015, with the results posted to the ETC website (http://www.etcc-ca.com). PG&E is actively working to bring the lessons learned from these Demonstration Showcase projects to inform program strategy for residential new construction.

Along with the ZNE Demonstrate Showcase projects, PG&E's ET team helped gather market data for moving retrofit LED linear lights linear paired with an advanced lighting control system (ALCS) for commercial office buildings to be adopted in downstream programs. The team also successfully identified several other new and innovative technology solutions for the CA IOU EE programs such as advanced home energy management systems (HEMS), SMB-targeted energy optimization tools, pool pumps for multi-tenant facilities, deep root irrigation (DRI) and technologies in other market segments such as industrial, by verifying the savings and associated benefits of each technology solution. All the 2015 PG&E TA projects describing the results, conclusions and recommendations are accessible via the ETCC website, at http://www.etcc-ca.com, which allows filtering by IOU and year of publication.

Beyond technology solutions, the ET team successfully assessed a financing solution to support PG&E's On-Bill Financing (OBF) and On-Bill Repayment (OBR) activities, to demonstrate the value of providing an easy to understand financing vehicle to vastly increase adoption rates of all EE measures targeted for the hard to reach SMB segment.

Opportunities Moving Forward

In 2016, PG&E will maintain its focus on expanding the pool of new and innovative ideas and solutions that can be offered to customers. Based on EE market and technology trends, PG&E will place particular emphasis on integrated solutions [heating, ventilation, and air-conditioning (HVAC) with lighting, demand response (DR)/distributed generation (DG) incorporation, etc.], data analytics, and software-based solutions to help deliver greater value to the customer and drive higher adoption rates. The advent of software controls combined with high-quality, reliable end user energy consumption and demand data, enables PG&E to target increasingly granular end use solutions and further engage customers in realizing long-term CEESP goals.

Workforce, Education and Training

As part of meeting its ambitious energy efficiency (EE) targets, California recognizes the need for a well-trained workforce that has the knowledge and skills to recognize and act on energy efficiency opportunities. Workforce Education &Training (WE&T) provides professionals who design, build, and operate buildings the relevant skills needed to help eliminate unnecessary energy use in buildings today and into the future.

PG&E's WE&T Program staff continued to demonstrate leadership in the local, state, and national EE workforce arenas. While administering three WE&T subprograms—Planning, Centergies, and Connections—our WE&T subject matter experts also advised local workforce development organizations, post-secondary educational institutions, and trades' training programs. WE&T staff also presented at regional and national workforce development and technical conferences in addition to being technical EE advisors to PG&E's EE Programs and Product teams and external industry groups.

Connections Celebrates 25 Years of Success!

The PG&E developed Energenius Program for pre K-8 celebrated its 25th year and distributed educational materials to over 86,500 students in 820 schools. PG&E also released a new program on Smart Energy Technology and the Environment which makes nine programs from Pre-K through middle school. 92% of the teachers surveyed regarding the quality of the materials rated the Program as excellent or very good.

Key Initiative: Stakeholder Engagement

Stakeholder engagement and support are important to WE&T's long-term success. Through 2014, WE&T held mandated Taskforce meetings to keep stakeholders informed about WE&T plans and activities. Historically, Taskforce meetings were held at the CPUC in San Francisco. Participants had to travel to San Francisco to participate or call in via a phone conference line. In 2015, WE&T used Internet streaming video and web conference technology to connect participants from across the State. This change provided participants the option of participating from three different meeting places: San Francisco, San Diego, and Los Angeles. Participants could also log in from their home or office. The change in structure and use of technology more than doubled training participation and likely reduced travel time and costs. In addition, WE&T renamed the meetings "Stakeholder Engagement Forums" and modified the structure and content to allow for more input and dialog. The meeting agendas also included information about WE&T's regulatory environment so stakeholders were aware of the regulatory construct governing WE&T activities. Stakeholders verified that video conferencing and changes to the structure and content were significant improvements from the Taskforce meetings held in prior years.

Strategies and Successes

2015 was another year of ongoing high-quality delivery of EE WE&T programs, educational materials, technical advice, community outreach, and tools from our lending library. WE&T engaged in program redesign based on market needs, and expanded stakeholder engagement, setting a foundation that will support the future EE workforce demands and WE&T Program direction. Details around those strategies and successes are included in the WE&T Subprograms sections below.

Implementation Challenges

The Don Vial Center Guidance Plan (Guidance Plan) included several recommendations for how the IOUs' WE& and EE Resource Programs could better serve disadvantaged workers. Many of the recommendations could significantly impact the EE Programs' cost-effectiveness. For this reason, PG&E and the statewide WE&T team launched research to study the feasibility and impact of implementing specific Guidance Plan recommendations related to serving low-income and disadvantaged communities.

This research is currently underway, and will be completed in Q2 2016. The studies will answer questions, such as "What other organizations and agencies are there in California that WE&T could leverage to serve low-income and disadvantaged workers?", "What are the financial impacts to the EE programs for implementing a prevailing wage requirement for EE programs, and "What are the details and costs for online workforce data collection services?" Answers to these and other questions will provide information needed to determine whether or not the EE and WE&T programs should adopt or partially adopt specific recommendations from the Guidance Plan. WE&T will then work with relevant EE programs to determine when and if recommendations can be implemented or partially implemented.

Opportunities Moving Forward

In 2016, PG&E will continue to lead the effort to finalize a 10-year statewide WE&T strategic plan to identify forward-looking opportunities. This is the first time that WE&T will have an overarching strategic plan. The statewide Strategic Plan is an internal document that will inform the regulatory WE&T Business Plan. The strategic plan will include input from several sources, such as WE&T leadership, EE leadership, EE programs staff, stakeholders, the Don Vial Center Guidance Plan, EM&V studies, market data on EE savings potential, and EE jobs forecasts in California. The Strategic Plan will include a mission, vision and goals as well as strategies and tactics to achieve goals and metrics to measure success.

A significant opportunity for WE&T involves expanding our reach to a broader audience. This includes better utilization of our online/on-demand delivery platform. It also includes leveraging other institutions to help us reach a more diverse, local workforce and working with trainers who teach in other institutions to help them deliver educational content developed by the IOUs to their students locally.

The statewide WE&T program will also focus on developing and implementing better metrics. Current metrics document outputs—numbers of classes, outreach events, technical consultations, and tool loans—and do not capture the full impact of WE&T activities, such as behavior change, potential energy savings, market transformation and institutional changes to other organizations' curricula.

WE&T Subprograms

WE&T Planning

WE&T Planning develops the framework for planning, coordinating, and implementing WE&T activities, partnerships, and recommendations to meet WE&T goals. WE&T Planning also makes program modifications to evaluate and incorporate market and stakeholder demand.

2015 Strategies and Successes

In January 2015, PG&E presented at the California Apprenticeship Council's quarterly meeting in Monterey. This served as an opportunity to promote our EE WE&T technical expertise and resources to participating trade members and their leadership. Furthermore, The Division of Apprenticeship Standards "Apprenticeship" newsletter published an article authored by PG&E. In another 2015 edition of "Apprenticeship", PG&E was credited for its technical expertise and collaboration in support of the carpenters' training program. Our presence in this newsletter is a first, and has opened up new opportunities with a new audience. We believe this confirms that PG&E's expertise is valuable to trade organizations for upskilling their workforce on energy efficiency.

As part of a statewide effort to expand our reach, and enhance the energy efficiency portion of core training programs, PG&E convened IOUs and representatives of three building trades—carpenters, stationary engineers, and sheet metal workers. We outlined how to support one another in the short and long term, and how regionally-focused efforts could be expanded to other parts of California starting in 2016.

In 2015, Northern California sheet metal workers agreed to begin promoting PG&E's HVAC Quality Inspection and Quality Maintenance, including offering economizer installation and maintenance courses to their journeymen starting in 2016. As a result of this 2015 planning work, classes have been identified and scheduled for early 2016. For Local 39's stationary engineers, PG&E reviewed their existing course materials and provided updated course content focusing on changes in the Title 24 energy code, controls and operations, and state-of-the-art HVAC systems. Local 39 will include these new course materials in their stationary engineer curriculum in early 2016. The IOUs also delivered five energy efficiency classes for carpenter journeymen and apprentices on topics including air sealing, advanced framing, window selection, and commissioning of the building envelope. To further leverage IOU energy efficiency course content, the IOUs and carpenters agreed to collaborate on "train the trainer" sessions for carpenter trainers on topics including advanced framing, blower door testing, and infrared camera.

WE&T Centergies

PG&E's WE&T Centergies subprogram consists of three Energy Centers—the Pacific Energy Center (PEC) in San Francisco, the Energy Training Center (ETC) in Stockton, and the Food Service Technology Center (FSTC) 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. The classes offered through the energy centers received student satisfaction ratings of over 98%, and the Tool Lending Library received 100% customer satisfaction ratings.

2015 Strategies and Successes

The Centergies Program continued to deliver high-quality EE WE&T programs, education materials, technical advice, and building performance measurement tools throughout PG&E's territory. Training included a mix of market building and skills building classes that included single-day training as well as series of multi-day training classes.

The Centergies team launched an online and on-demand training platform to help serve the market demand for online classes, and deliver training content in the most appropriate, cost-effective format possible. The platform allows PG&E to reach a broader audience while also providing an opportunity for in-person trainings to focus on more advanced principles and hands-on learning exercises by making prerequisite trainings available online.

The Stockton Energy Training Center (ETC) first opened its doors to residential contractors and builders in 1978. In 2015, PG&E relocated the ETC to a more modern and easily-accessible location in Stockton. The new site has increased lab space, updated classrooms, and more current building systems and technologies. The space also includes a zero net energy (ZNE) demonstration home that allows visitors to learn about ZNE, residential design strategies, and state-of-the-art building systems and technologies that contribute to creating a ZNE home. The ZNE demonstration home has a self-guided tour that utilizes an iPad providing an interactive learning experience for visitors.

WE&T Connections

The Connections subprogram provides teaching resources for K-12 and college instructors as well as EE and green career awareness programs for K-12 and college students. PG&E's WE&T Connections subprogram includes Energenius (pre K-8), PEAK (K-8), Green 360 (9-12), and PowerSave Campus (postsecondary). In 2015, PG&E's WE&T Connections met all filed program goals.

To ensure that PG&E has the best programs for the K-college audience in place, the Connections team issued and awarded three statewide Requests for Proposals (RFPs) for K-8, high school, and post-secondary audiences. To move the postsecondary programs toward being self-sustaining, a financial commitment is now required from the participating colleges. This will release funding for more campuses to participate in the future.

2015 Strategies and Successes

PG&E enhanced curriculum offerings in all Connections programs to integrate energy efficiency, demand response, distributed generation, and green career awareness. Additionally, PG&E updated K-12 curriculum to correlate with California's Common Core State Standards and the Next Generation Science Standards. These updates were required for teachers to continue to use our materials in California.

PG&E linked and leveraged Connections programs to integrate resources across age groups. For example, college interns held 45 off-campus community outreach events at K-12 schools, churches, farmer's markets, and community colleges. Additionally, Connections partnered with the PG&E Low Income program to customize the Energenius curriculum on EE education for low-income students.

Green 360 provides career planning resources to identify EE and green career pathways. In 2015, Green 360's audience was made up of middle schools, high schools, and colleges. Its audience also included community-based organizations, such as the Work2Future program which helps at-risk young adults secure employment through its education, training, and job placement services. Work2Future now uses PG&E's Green 360 career planning resources as part of its core Environmental and Career Technical course curriculum.

PowerSave Campus completed its 10th year in the PG&E service area with interns at seven University of California (UC) and California State Universities (CSU) campuses. Through PowerSave projects, UC/CSU students, faculty, and staff identified a per-campus average

potential energy savings of 837,016 kWh. Beyond being identified, many of these energy-savings campus projects were implemented in 2015. Through the PowerSave program, interns collaborated with college professors to incorporate energy efficiency, demand response, and distributed generation concepts into new and existing courses. These courses will remain in place in several campuses in 2016 and beyond. Furthermore, in 2015 the CSU Chico and UC Berkeley teams were recognized at the California High Education Sustainability Conference. Both teams received Student Energy Efficiency Program Awards for their Wildcat Sustainability Showdown and LED Microscope Retrofit projects.

Integrated Demand Side Management

The California Long Term Energy Efficiency Strategic Plan (Strategic Plan) recognizes the integration of demand-side management options, including EE, demand response, and distributed generation, as fundamental to achieving California's strategic energy goals. To support this initiative, the IOUs have identified integrated demand-side management (IDSM) as an important strategic 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.

An 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 the EE decision as follows:

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/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 demand response marketing programs approved as Category 9 programs are coordinated with EE integrated marketing efforts.

Achieving IDSM Objectives

PG&E continues to work towards **taking a holistic approach to customers' needs** when offering potential solutions to customers. Collaboration is a focus amongst many different internal departments including energy efficiency, demand response, rates, customer support, emerging technology, electric vehicles, net metering, energy assistance and others to develop the offer the right solutions, to the right customer, at the right time. PG&E continues to emphasize the importance of this approach throughout the organization.

Successful Strategies

Statewide IDSM

- Further efforts on developing integrated cost effectiveness and EM&V methodologies are on hold pending direction from the Energy Division.

- The 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 2015, 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
- 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 addition to the meetings described above, the IOUs have coordinated on a Statewide basis in several areas:
    - The SW Online Integrated Audits team continues to coordinate to deliver a consistent online integrated audit tool that works with each IOU interface and educates customers on managing their energy use costs.
    - The Onsite Integrated Audits team continues to collaborate to share approaches and best practices and to discuss ongoing collaboration. The IOUs continue to offer onsite integrated audits to small, medium and large customers.

PG&E's IDSM Efforts

- Gathered, collaborated and prepared the quarterly and annual reports with internal and external stakeholders to provide information to the Energy Division and the Commission.
- Provided thorough training to staff regarding IDSM objectives throughout the year. The cornerstone of the training program was to host our annual IDSM summit in April 2015 to increase knowledge and awareness on integrated approaches, meet regulatory compliance directives and to promote communication between all divisions and departments.
- Identified and collaborated upon items with the IOUS to further pursue alignment of IDSM objectives. This included attending bi-weekly SW IDSM task force update calls and IOU subject matter experts sharing information regarding their areas of focus.
- Integrated marketing campaigns and collateral continued throughout the year for business and for residential / smaller business customers.
- Performed liaison services of integrated efforts between departments/sectors/teams/groups and informed the SW taskforce of progress being made.
- SmartAC launched 2015 with 770 referred customers installed in Q1. During Q2, the ESA contractor successfully referred 88 new SmartAC enrollments. Q3: due to their summer focus on the AC Tune-up program, there were limited resources available for SmartAC recruitment. We recorded 10 referral installs for Q3. They resumed limited recruiting in Q4 and the ESA contractor had 32 referral installs for SmartAC.
- The ESA Program staff continued to work with energy efficiency program (MIDI, EUC, and MFEER) staff to further collaborate and streamline program processes.

Referrals continued to be provided to the MIDI program of customers that exceed the ESA Program income guidelines.

- Emerging Technologies reviewed a number of projects and one that is highlighted for 2015 is the ZNE Builder Demonstration Project. To move motivated production builders toward the state's ZNE goals and help them to get ahead of the curve, PG&E is running a ZNE Production Builder Demonstration project. The overall goal is to help production builders to develop a new ZNE prototype or to upgrade one of their existing prototypes to ZNE by providing support from start to finish. This includes design support, construction inspections, incremental cost assistance, and performance monitoring of the completed home.

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.

2015 Key Initiatives

On-Bill Financing Program Improvements

PG&E's OBF Program has seen continued growth in applications and loan volumes in 2015. In particular, applications from the Small-Medium Business (SMB) sector have increased 22% year-over-year.

During 2015, PG&E implemented significant improvements to its OBF Energy Insight platform, creating a streamlined OBF application process for internal staff and partners, as well as integration with rebate and incentive programs. The new system will improve processing times for customer loans, and allow for better data analytics for program oversight and reporting.

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 and 2015. The Finance team continues to work with our partners to focus on operational excellence, training opportunities for our partners, and operational excellence by closely monitoring processing times. The improvements to the program operations have allowed PG&E to propose an OBF Alternative Pathway in 2016 as a high opportunity program as authorized under Assembly Bill 802.

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

In 2015, PG&E maintained the success of the OBF Program while making significant investments to improve processing time and scalability for the future.

Outcomes:

- **$17.8 Million** in new loans for 367 energy efficiency projects, saving **35 GWh**
- New web-based, **streamlined** application process for internal users and partners

Financing Pilots

Throughout 2015, PG&E and the Statewide Financing Team worked closely with Commission Staff, the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA), the other IOUs and the Center for Sustainable Energy on the development of the Statewide Finance Pilots.

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 was expanded with an e-book on 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 2015, the OBF Program continued its strong growth in applications and financed projects, totaling 367 loans issued for $17.8 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.

Opportunities Moving Forward

For the OBF Program in 2016, we will continue to optimize our loan processing with our new web-based application system, 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.

We also look forward to launching an alternative pathway for OBF that will not require participation in a rebate or incentive program through the High Opportunity Projects and Programs pilot framework. This will open financing to projects that do not fit into standard measure-based programs, expanding opportunities for customers and contractors. It will also allow for quicker processing and payment of OBF loans.

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.

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

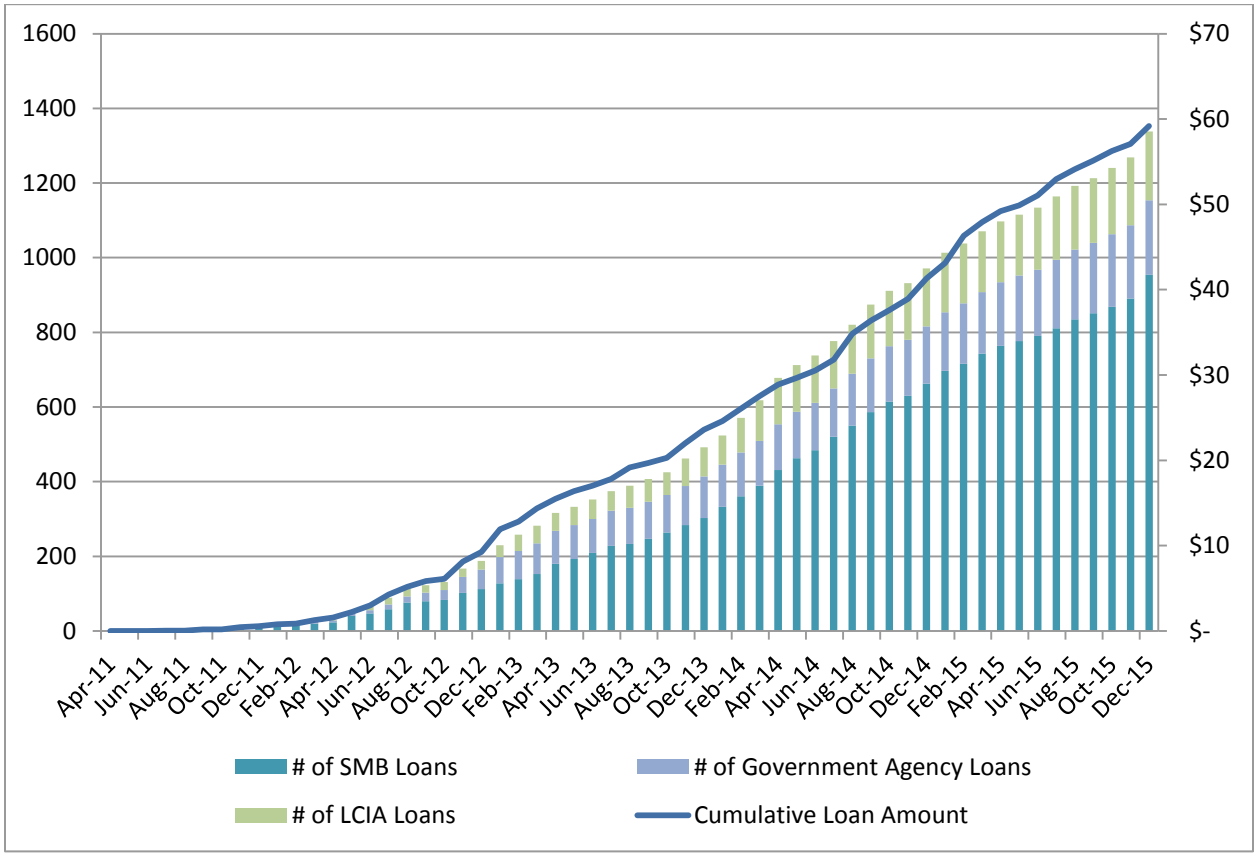
SMB customer segment saw particularly strong growth, with the **number of new SMB applications increasing 22 percent** (490 to 597) and **290 new SMB loans originated for $8.2 million.**

In 2015, **OBF loans contributed to 35 GWh** of customer specific energy savings, represented by the energy savings used to calculate the loan repayments.

2015 Strategies and Successes

2015 was another banner year for PG&E's OBF Program. The OBF Program broke its financing record for the second year in a row, with $17.8 million in new loans to 367 customers. The Program also continued work with PG&E's Channel Marketing team, creating new case studies and marketing materials which led to a strong increase in new applications, particularly

from the SMB segment. Together with the significant new improvements to PG&E's Energy Insight application platform, this has set the stage for more strong performance in 2016.



Through 2015, 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 Energy Finance Line Item Charge Program, a residential On-Bill Repayment program to be offered in PG&E's service territory.

The Financing Pilots will also include 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.

2015 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 2016 and the OBR and EFLIC programs are scheduled to launch once the statewide loan servicing function has been implemented.

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

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," as authorized in D. 12-05-015. Messages within the umbrella brand are not 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.

On July 28, 2015, The Commission issued D. 15-08-033 to authorize 2016 bridge funding to enable CSE to continue to implement the Statewide Marketing and Outreach Plan authorized in D. 13-12-038 in the same manner, and under the same governance structure as authorized in the decision.

On October 26, 2015, The Commission issued a scoping memo to begin a third phase of the proceeding to consider issues regarding the funding and implementation of its statewide marketing, education, and outreach campaign, "Energy Upgrade California," after the bridge funding approved in D.15-08-033 expires at the end of 2016. As required in D.16-03-029 on March 17, 2016, the Commission authorized issuance of a Request for Proposal (RFP) to select the statewide administrator for a 3-year term beginning in 2017, with an option to extend the contract for an additional two years based on performance.

Strategies and Successes

The 2015 strategy for the Statewide Marketing, Education, and Outreach program was outlined in CSE's quarterly integrated communications plans CSE filed1 for phase two, three, and four, 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. During 2015, CSE's integrated communications plans included the following topics: Help California stay golden – Play your part, California Climate Credit, Financing, Home Automation, Drought: Energy and Water, Cool California Challenge, Energy Efficiency and Low Cost Energy Actions, Energy Upgrade California Home Upgrade, Time-Varying Rates and Standby Energy/Plug Load.

To support the strategy outlined above, the IOUs and Regional Energy Networks (REN) are responsible for collaborating with CSE on the statewide Energy Upgrade California brand campaign marketing, education and outreach activities. Collaboration support includes providing information to CSE or the Commission 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 or concerns with the semi-annual marketing plans proposed by CSE. 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 have provided comments on items ranging from the overall semi-annual integrated communications plans and brand architecture (like the Energy Upgrade California website) to specific tactics such as the retail engagement and community-based outreach strategies.

Additionally, PG&E serves as the fiscal manager for the CSE statewide contract.

In the fiscal manager role of the contract, PG&E does not have control over CSE's design of or modifications to the statewide ME&O program as CSE is independently responsible to the Commission for delivering the results of the statewide ME&O program. PG&E issues payment to CSE for invoices once Energy Division staff has reviewed and provided their approval to pay the invoice.

Descriptions and Strategies – Local Programs

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 order to serve this diverse group of customers, PG&E leverages local partnerships and third party programs to serve targeted and niche markets, harder-to-reach segments and to focus customer groups with specific needs. This section describes PG&E's 2015 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

Government and Community Partnerships

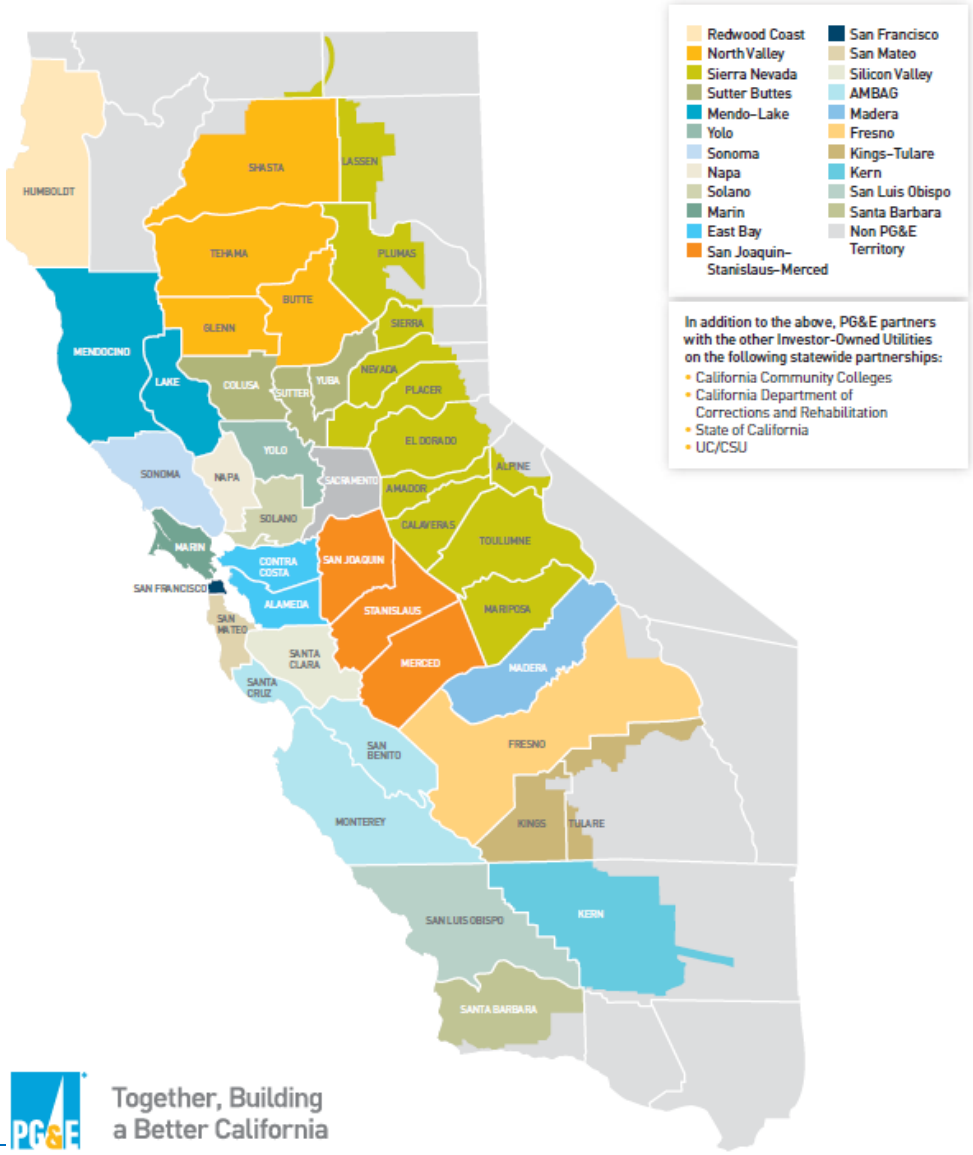
PG&E's Government and Community Partnerships are dynamic collaborations that shape energy efficiency and sustainability at the local, regional, and statewide level. These partnerships aim to leverage leadership and other strengths of PG&E and community champions to create holistic solutions that are flexible, innovative, and unique to local and regional needs.

PG&E's Government and Community Partnerships team administers 22 local and regional partnerships as well as four institutional statewide partnerships with California Community Colleges, University of California/California State University (UC/CSU), the State of California and the California Department of Corrections.

The 22 local and regional partnerships share a mission of empowering public sector, commercial and residential customers in achieving energy savings, reducing Green House Gas (GHG) emissions and supporting local economies. These 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 energy efficiency programs that achieve three overarching partnership objectives:

1) **Improve the energy efficiency of municipal buildings,**
2) **Promote energy efficiency and environmental sustainability within the community, and**
3) **Support the local government goals of the California Long Term Strategic Plan.**



PG&E's local and regional partnerships deliver energy efficiency incentives, tools and technical assistance to public agencies, small and medium businesses, non-profits, and residential customers. These services are primarily delivered through Regional Direct

Install programs. Customers benefit from a high level of technical assistance and turnkey installation whereby the incentive payment is incorporated into to the project proposal. These programs are administered by nine Direct Install implementers across the service territory.

These partnerships also work to meet the targets of the California Long Term Strategic Plan by proactively developing and implementing energy efficiency strategies that support 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 2015.

Key Initiatives

In 2015, Government and Community Partnerships laid the groundwork for program innovation to serve hard-to-reach customers and drive cost-effectiveness. 2015 was a year of stakeholder engagement and program designs, as the Government and Community Partnerships actively participated in scoping and modeling conversations all geared towards reaching more customers with the products and services that they most need.

PG&E's Partnerships also continued their leadership with local government climate action and GHG planning. To date since 2010, PG&E's 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 encounter unique barriers to adopting energy efficiency measures compared to those of larger and well-resourced commercial facilities.

The small and medium business (SMB) community is a core focus of the Regional Direct Install Program model. Partnership implemented Regional Direct Install programs deliver over half of the SMB energy savings achieved by PG&E's downstream energy efficiency portfolio. Underserved small and medium commercial customers typically need additional support in designing and managing energy efficiency 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 energy efficiency.

The public sector presents unique challenges for the adoption of energy efficiency and Government and Community Partnerships offers focused opportunities for these customers, including an LED Streetlights Program and statewide partnerships that build long-term relationships with State and Higher Education customers, among others.

Implementation Challenges

In 2015, PG&E's Government and Community Partnerships team led an initiative to better align the two main delivery channels serving SMB customers: Regional Direct Install programs and PG&E Core Deemed offerings delivered through the PG&E Trade Professional (Trade Pro) network. As a result of an extensive assessment, opportunities were identified to better coordinate activities and offerings between these two channels, including more closely aligning incentives offered to customers. As a result, Regional Direct Install programs adopted a consistent incentive structure across all nine programs, including creation of an enhanced incentive for reaching under-served customers.

Opportunities Moving Forward

Government and Community Partnership work in 2016 is informed by the successes and challenges of 2015 for all sectors and stakeholders. After an extensive planning and stakeholder engagement process, the Regional Direct Install offering plans to launch a refreshed incentive structure in January 2016 to align with PG&E's core offerings.

Government and Community Partnerships are the primary venue for delivering energy savings to both SMB and Public Sector customers. With the Rolling Portfolio 5 year business plan submissions on the horizon for 2016, the Partnerships have an opportunity to demonstrate leadership and innovation in program administration.

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 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 2015.

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.

California Community Colleges (CCC)

The California Community Colleges/Investor Owned Utility (CCC/IOU) Energy Efficiency Partnership advocates, promotes and supports energy efficiency in the California Community College system by leveraging resources from the Community College Districts, the Community College Chancellors Office, the four California Investor Owned Utilities, and the State of California. This unique Partnership results in achieving common goals for energy use reduction, cost savings, and fostering a more sustainable future.

Highlights of Institutional Partnerships
2015 Strategies and Successes

- Continued support services for **Proposition 39** funding to California Community Colleges includes enhanced outreach, project development and technical support for 72 districts containing 112 campuses throughout California. Completing 80 retrofit, 1 Monitoring Based Commissioning, and 3 New Construction projects.
- Completed more than **60 Retrofit**, Monitoring Based Commissioning, and New Construction projects at **23 different UC and CSU campuses** (inclusive of UC Med Centers) across the Partnership for 2015.
- The **CDCR Partnership** completed 5 major projects and filled its 2016 project pipeline.

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

To date, these efforts have resulted in the identification and funding across the State of nearly 600 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.

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. PG&E program funding of approximately $5.7 million for the 2015 program year continued 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 energy efficiency 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 2015 project completion and achievement.
- Completed more than 60 Retrofit, Monitoring Based Commissioning (MBCx) and New Construction projects at 23 different UC and CSU campuses (inclusive of UC Med Centers) across the Partnership.

- Additional projects generated from the California State University Chancellor's Special Repairs funding initiative.
- Continued the Program's Training, Education, and Outreach efforts and held various workshops for campus faculty and staff members.
- Held a UC/CSU Joint Energy Managers meeting as part of the CA Higher Education Sustainability Conference in CSU San Francisco, highlighting cutting-edge research, as well as case studies with proven successes in curriculum development, operational programs, 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 Energy Efficiency Partnership Program shares best practices and implements energy efficiency 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. 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 energy efficiency. The activities achieve cost-effective energy savings through energy efficiency, retro-commissioning, 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 $mart 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 energy efficiency 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. 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 energy efficiency, 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 22 local and regional partnerships in 2015 serving approximately 270 cities and counties. Six of these partnerships fall under the Local Government Energy Action Resources (LGEAR) including North Valley, San Joaquin-Stanislaus-Merced, Solano, Sutter-Buttes, Kings-Tulare (VIEW), and Yolo partnerships.

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 public sector program, providing both turnkey and customized EE solutions for municipal facilities and schools.

2015 Strategies and Successes

AMBAG developed a turnkey Prop 39 solution for schools that publically bid energy efficiency contracts. AMBAG assists the schools by developing and specifying quantities and performance requirements for equipment then provides that comprehensive package to schools to attach to their Request for Proposal (RFP) documents. The result has been fewer change orders during construction which has accelerated delivery time of projects and reduced overall administrative costs to both contractors and schools. This approach is being viewed as a best practice by other Energy Watch Partnerships.

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.

East Bay Energy Watch
2015 Program Highlights

- EBEW, with leadership from the SAC, conducted an impact evaluation on small and medium business Direct Install services. The East Bay stakeholders will use this impact evaluation to generate insights for future process evaluations.
- EBEW launched a new program, Your Energy Manager, targeting small and medium businesses for deeper and more comprehensive energy efficiency upgrades, and offering technical support and extra project management to help customers identify and implement comprehensive EE.

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 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 with QuEST as implementer.

2015 Strategies and Successes
In 2015, EBEW continued work with an Independent Partnership Manager that facilitated the relationship between the EBEW SAC and PG&E. In 2015, local government engagement in EBEW's quarterly meetings doubled, with an average of 15 local governments represented at each meeting.

In 2015, EBEW launched a partnership with the Civic Spark program, covering 80% of participation costs. Twelve jurisdictions are benefiting from a full time or shared full time equivalent Fellow working on climate action issues in their communities. In combination with this capacity-building resource, EBEW is offering no-cost Building Operator Certifications (BOC) training (scholarships) for municipal employees and no-cost participation in Lucid's Connected Cities program that leverage interval data and dashboard technology to inform and educate both the public and civic employees on energy consumption and use patterns.

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 in 2014 expanded the service to customers in Kings, Tulare, and San Joaquin Counties.

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 County of Kern serves as the partnership implementer and partners with the Kern Economic Development Corporation and other local agencies to provide support for outreach 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
2015 Program Highlights

- Benchmarking of County of Kern facilities
- Partnered with the City of Wasco to promote PG&E energy efficiency programs to homeowners and businesses and the energy efficient retrofit of City facilities.
- Provided direct install services to 161 small and medium-sized businesses and Municipal customers reducing their utility costs by nearly $1,000,000 annually.

2015 Strategies and Successes
In 2015, the Partnership created a unique partnership with the City of Wasco to promote PG&E and SoCalGas EE programs to the residents and business owners and assisted the City with the energy efficient retrofit of several City facilities. The Partnership also focused on assisting municipal customers with the benchmarking of their facilities, outreach to SMB customers, partnering with local water agencies to promote the efficient use of both energy and water and 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.

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, 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, implemented by Community Energy Services Corporation (CESC), provides start-to-finish technical assistance and energy assessments to nonresidential customers for lighting and refrigeration retrofits. MCEW also works with California Youth Energy Services to install hardware promoting energy efficiency, and delivers in-home energy assessments and education to residential owners and renters while providing green jobs for local youth.

In addition, MCEW assists cities and the county with climate action planning.

2015 Strategies and Successes
The program provides customers, especially municipal customers, with long-term comprehensive EE planning and implementation services.

Additionally, MCEW had a successful campaign for serving public schools in 2015 and that positioned the partnership for driving therm savings in the portfolio.

Mendo-Lake Energy Watch
MLEW is a partnership between the Community Development Commission of Mendocino County and PG&E. MLEW offers a comprehensive portfolio of energy efficiency programs that target residential customers, municipalities, small businesses, and nonprofits.

Using a locally-driven approach, MLEW offers innovative energy efficiency 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. MLEW also supports climate planning by providing municipalities with community-wide and municipal GHG emission inventories.

In 2015, MLEW exceeded its energy saving goals. Services provided by MLEW 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 energy efficiency services to municipalities, nonprofits, special districts and small and medium business 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.

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

2015 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 is managed by Northern Rural Communities Development, Inc. (NRCD). The NVEW is intended to develops, implements and promotes commercial energy

North Valley Energy Watch
2015 Program Highlights

- Working with Butte College and the North Valley Contractors Exchange, NVEW offers classes on energy efficiency and the water/energy nexus. In 2016 the partnership will continue to bring classes to contractors in the area.
- NVEW was recognized at the annual Grow Manufacturing Luncheon in Chico for help in providing energy efficiency information and installations.
- RHA, the direct install implementer, partnered with the California Conservation Corp providing several low-cost installations in many of the small, schools in their counties.

efficiency programs in Butte, Shasta, Glenn and Tehama counties to small and medium business and residents. In addition to the local governments, NVEW works with local workforce investment boards leveraging the relationships they currently have with many of the small to medium-sized businesses with which they engage. NVEW promotes energy efficiency programs, provides education and training.

Direct Install Program via Richard Heath Associates (RHA), a third party implementer.

2015 Strategies and Successes
In 2015, 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.

Redwood Coast Energy Watch
2015 Program Highlights

- Maintained a 30% conversion rate for non-residential co-pay projects.
- Worked with the LGC to bring, host and engage CivicSpark in Humboldt County and the northern state.
- Offered residential customers an innovative, low-cost Energy Upgrade California Home Upgrade Rater Pathway service, providing a prequalification gateway to Home Upgrade California participation.
- Continued a unique turnkey program to offer **Prop 39 Energy Management services** to Humboldt County Local Educational Agencies.
- Provided **785 unique energy management services** to residential and non-residential ratepayers.

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.

2015 Strategies and Successes
In 2015, 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 energy efficiency 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.

SFEW also leverages Strategic Energy Resource funding for long-term energy efficiency planning and bringing innovative solutions to San Francisco customers.

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

San Joaquin, Stanislaus, Merced

In 2015, the San Joaquin, Stanislaus, Merced partnership performed GHG inventories and climate action plans for jurisdictions in the Central Valley with the Great Valley Center (GVC). GVC also implemented the Energy Careers Experience Program that provides paid college student interns to PG&E offices throughout the Central Valley. These interns assisted customers with energy assessments, community outreach, and other energy efficiency resources.

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, the seven incorporated cities within San Luis Obispo County, and participating Community Service Districts (CSD). The County of San Luis Obispo serves as the partnership implementer, providing information and energy management and climate action planning service to municipal customers, and supporting EE services for other local residential and non-residential EE programs.

San Luis Obispo Energy Watch
2015 Program Highlights

- The County of San Luis Obispo and PG&E completed no-cost, comprehensive energy audits that identified deep gas and electric savings opportunities for nine underserved Community Service Districts.
- The County completed a detailed assessment of multiple County facilities, identifying eight key energy saving measures. The County Board of Supervisors approved the project to begin implementation in 2016, funded in-part by PG&E On-Bill Financing.
- The County completed a comprehensive facility inventory and database to improve the County's ability to identify and track energy savings opportunities.

2015 Strategies and Successes

In 2015 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 Central Coast emPower residential energy efficiency program. Program staff worked closely with nine CSDs to inventory and benchmark the energy use and cost of buildings, facilities and utility infrastructure and to develop customized facility energy action plans through PG&E's Large Integrated Audit Program. Program staff will utilize this detailed information to help the CSDs select, finance, and implement projects that improve operations and reduce energy costs, use, and lower GHG emissions. The program also completed a comprehensive inventory and database for all of the County's facilities and utility infrastructure, enabling the County to better identify and track energy savings opportunities. Finally, Program staff completed the planning portion of a large energy efficiency

retrofit project for multiple County facilities, utilizing PG&E Sustainable Solutions Turnkey (SST) program. The project is the largest energy efficiency retrofit project in San Luis Obispo County history, and was approved by the Board of Supervisors in 2015 for implementation in 2016.

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.

2015 Strategies and Successes

SMCEW continued to work with cities on climate action planning and implementation activities in 2015. Staff hosted 12 Regionally Integrated Climate Action Planning (RICAPS) city working group meetings. Of the 20 cities in the County, 13 have adopted climate action plans and four more have drafted plans headed for adoption, with the final three cities working on their draft CAP documents.

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.

Santa Barbara Energy Watch
2015 Program Highlights

- Held a community outreach event with Supervisor Salud Carbajol in the community of New Cuyama to promote PG&E residential and business energy efficiency programs.
- Partnered with the City of Buellton to promote PG&E energy efficiency programs to homeowners and businesses and the energy efficient retrofit of City facilities.
- Provided **direct install services to 47 small and medium-sized businesses** and Municipal customers reducing their utility costs by nearly $250,000 annually.

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.

2015 Strategies and Successes

In 2015, the Partnership created a unique partnership with the City of Buellton to promote PG&E and SoCalGas energy efficiency programs to the residents and business owners and assisted the City with the energy efficient retrofit of several City facilities. The Partnership also 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 energy efficiency 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 11 rural Sierra counties, including Lassen, Plumas, 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.

Sierra Nevada Energy Watch
2015 Program Highlights

- Via a "Water-Energy" Nexus assessment, SNEW worked with water agencies providing leak detection training. During the training, SNEW identified leaks totaling an estimated 67 gallons per minute.
- SNEW installed several EE projects in municipal facilities in their territory including the County of El Dorado and the City of Grass Valley.
- SNEW provided benchmarking services and reinventories for six jurisdictions and trained employees on protocols enabling them to update as needed.

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.

2015 Strategies and Successes

SVEW, in partnership with PG&E, was one of five cities selected to launch Step Up & Power Down campaign. This pilot effort provides participants with simple, energy saving strategies,

tools and feedback to achieve a community energy saving goal. By the end of 2015, SVEW was on target to achieve its engagement and savings objectives.

Solano Energy Watch

Solano Energy Watch (SEW) provides comprehensive EE services to municipalities, nonprofits, special districts, SMBs, and residential customers. The partnership comprises 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 serve the community. Services include audits, retrofits and outreach. The partnership launched in 2014 and has showed great strength in outreach to Solano County residents, SMB customers, and municipalities. Among SMB customers who were engaged in-person by the Solano EDC in 2015, approximately 70% went on to complete an EE project with the Energy Watch.

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

Sonoma County Energy Watch (SCEW) offers a comprehensive portfolio of energy efficiency programs that target municipalities, nonprofits, small and medium businesses, 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 a residential direct install and education program that employs youth energy specialists administered by Rising Sun Energy Center.

2015 Strategies and Successes

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

Sutter Buttes Energy Watch

Sutter Buttes Energy Watch (SBEW) is a partnership that includes Colusa, Sutter and Yuba Counties. Their goal is to promote energy efficiency and the reduction of greenhouse gas emissions in local government operations. SBEW concentrates on government facilities, nonprofit organizations, small businesses, residences, farms, schools and factories promoting energy efficient programs. SBEW 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 SBEW brings energy efficiency training and workshops, a tool lending library and a MIDI program.

2015 Strategies and Successes

SBEW's focus for 2015 was on promoting the Targeted Demand-Side Management (TDSM) program, developing relationships within the counties, while promoting PG&E energy efficiency programs. Sutter Buttes Energy Watch achieved the targeted substation goals for their territory and exceeded their energy savings goals triple fold. Through their efforts, Yuba City implemented several large energy efficiency projects on their facilities.

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.

Valley Innovative Energy Watch (VIEW)
2015 Program Highlights

- VIEW organized a community outreach event with Kings County Supervisor Doug Verboon in the community of Hardwick.
- Organized a community outreach event with Tulare County Supervisor Pete Vander Poel in the community of Alllensworth.
- Organized a community outreach event with Tulare County Supervisor Steve Worthley in the communities of Sultana/Monson.
- Provided direct install services in Kings and Tulare Counties to **51 small and medium-sized businesses** and Municipal customers reducing their utility costs by over $250,000 annually.

2015 Strategies and Successes

In 2015, the VIEW Partnership expanded its efforts to assist the Partnerships throughout the San Joaquin Valley with benchmarking and EE project development for municipalities. The Partnership also 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, SCE 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.

Yolo County Energy Watch
2015 Program Highlights

- YCEW worked with the City of Woodland Mayor, staff, representatives and the Woodland Step Up and Power Down Initiative to increase community energy efficiency.
- Working with community groups, YCEW is in the process of developing a “Community Energy Ambassador” program to be piloted in the faith community.
- The partnership continues to participate in and support the School Energy and Environment Program (SEEP). This program provides educational materials and training to teachers in the district.

2015 Strategies and Successes

Our direct install implementer partnered with the California Conservation Corp providing several low-cost installations in many of the small schools in their counties.

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, energy efficiency and water conservation. 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. In 2015 PG&E dispersed funding to 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.

2015 Strategies and Successes

The program continues to engage businesses through a new interactive homepage at www.greenbusinessca.org, launched in 2015, which includes information on how to apply for the program and how to find a green business. The website also 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.

In addition, GBPs were launched in two new areas in the Central Valley: San Joaquin County and Fresno County. Furthermore, PG&E assisted the network by supporting the development of co-branded marketing collateral for distribution to businesses by the GBPs and PG&E alike.

Statewide Energy Efficiency Collaborative 2015 Program Highlights

- Directly engaged over 270 people through 8 in-person events that provided valuable educational and networking opportunities.
- Engaged over 370 people through online webinars on timely topics such as AB 802, SB 350, ClearPath updates, and a variety of best practices.
- Re-released the online SEEC Resource Portal, adding or updating over 20 resources, and incorporating user feedback to improve usability and access to important best practices, cast studies, templates, factsheets, a calendar and other resources.
- 13 new Beacon Participants, totaling 77 cities and counties representing more than 25% of California's population. Awarded 85 Beacon Spotlight Awards to 30 cities and counties, and recruited 10 new regional Beacon champions.
- The number of local governments registered to manage their energy and emissions in SEEC ClearPath grew to 298.

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.

Third Party Programs

Third Party programs provide turnkey and concierge services for PG&E's customers, which facilitate participation in EE programs. 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 an 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 IDEEA 365 programs were launched early in 2014 and built market traction throughout 2015.

Residential Third Party Programs

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

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.

In 2015, PG&E issued an "innovation" solicitation for third party implementers to design additional EE programs. PG&E's IDEEA365 Program was designed specifically to provide broad latitude for third party vendors to propose innovative new programs. The new IDEEA365 programs are scheduled to be launched in the second quarter of 2016.

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. PG&E completed an innovative program solicitation, through the IDEEA365 Program, in 2015 as part of our ongoing effort to allow for the introduction of innovative ideas and technologies into the energy efficiency portfolio. The selected program will be launched in 2016.

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 Enhanced 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 installing a fan delay relay that runs 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 that reduce fan power consumption during heating and cooling. In order to better extend our

reach to multifamily customers, the program added a multifamily tune-up service. The multifamily program offers property managers a no cost tune-up, fan delay relay installation, high efficiency BPM fan motor installation, as well as incentives for establishing a maintenance contract. This focus on maintaining a properly tuned air conditioner can improve tenant comfort and reduce their costs.

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, Tier II Smart Power Strips and 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.

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, and remain innovative by adapting to changing market needs. PG&E offers a variety of Commercial Third Party programs that span various market segments, targeting many of PG&E's harder-to-reach customers.

PG&E's 2015 Commercial Third Party Programs						
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	
Energy Fitness Direct Install	x	x		x	x	
Energy Savers Program	x	x		x	x	
Furniture Store Energy Efficiency	x				x	
LED Accelerator	x	x		x		
Lodging Savers			X		x	
Casino Green	x		X		x	
K-12 School Private Schools				x		
Healthcare Energy Efficiency				x	x	
Commercial Mid-Market (IDEEA 365)	x	x		x		
Commercial Real Estate Outreach (IDEEA 365)		x				
Data Centers Plus (IDEEA 365)		x		x	x	
Energize Schools (IDEEA 365)				x		
Analytics-Enabled RCx (IDEEA 365)				x		
Bridges to Energy (IDEEA 365)						x
Dynamic Gas Scavenging (IDEEA 365)				x		
Laboratory Fume Hoods (IDEEA 365)				x		
School Energy Efficiency				x		
RightLights Direct Install	x	x		x	x	
ICFI Bridges To Energy Sector						

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.

AirCare Plus provided quality tune-up services to 1,194 customers and 10,721 packaged rooftop units across PG&E territory, saving 11,449,445 kWh 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. The Air Care Plus program was combined with the HVAC Quality Maintenance Program in an effort to streamline Commercial HVAC offerings. Air Care Plus was closed on 12/31/15.

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.

EnergySmart Grocer Program

Implementer: CLEAResult

The EnergySmart Grocer Program provides comprehensive EE services for medium to large 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 has delivered significant energy savings for customers over the last eight years. Notably, in 2015, the program delivered 15.9 million kWh and 2,015 kW savings. The program has successfully partnered with PG&E account representatives to leverage PG&E's On-Bill Financing (OBF) Program to implement large-scale and complex retrofit projects delivering deeper savings. Twenty-eight OBF loans were issued in 2015, totaling $1,436,697.

Energy Fitness Direct Install 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. The Energy Fitness Program closed in 2015.

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. The Energy Savers program closed in 2015.

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.

2015 Strategies and Successes

Building upon their one of the most effective 2014 strategies, the Program continued to utilize 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 together to increase customer participation and installation turnaround.

Matrix Furniture 2015 Program Highlights

- In its sixth year of implementing two major direct install programs with PG&E, The Program achieved savings of **7 GWh** and **1.4 MW** during 2015. The program paid out incentives totaling $1.4 million.

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 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.

Given the program's success, it is being expanded in 2016 to serve additional retail customers, not limited to furniture stores.

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.

LEDA 2015 Program Highlights

- LEDA incented one big box customer, who saved **3.6 annual GWh,** reduced peak demand by **840 kW**, while qualifying for an $836,374 incentive.
- Overall, LEDA served **15 retail chain customers** in 2015 resulting in savings of 6.2 GWh and 1.4 MW. The program paid out $1.4 million in incentives.

2015 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 quality 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.

LodgingSavers Program

Implementer: Ecology Action

LodgingSavers offered a comprehensive list of EE measures and services specifically designed to meet the complex needs of the hospitality market. LodgingSavers was implemented by Ecology Action and was available throughout PG&E territory. Customers with less than 400 guestrooms were eligible for turnkey Direct Install services and targeted incentive rates designed to facilitate implementation. Customers requiring Customized services and those with more than 400 guest rooms were eligible to receive no cost engineering services. The experienced implementation team guided these customers through the Customized application process in order to receive incentives in line with the Core Customized offering.

2015 Strategies and Successes

By virtue of its long program history, LodgingSavers was able to develop strong working relationships with lodging customers, and chain customers in particular. These relationships 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 helped support the coordination and implementation of projects across hotels of the same chain. LodgingSavers completed 117 Direct Install projects and 11 Custom projects in 2015.

Casino Green Program

Implementer: Ecology Action & Nexant

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

2015 Strategies and Successes

The program served 5 out of 32 possible casinos with Direct Install services and one casino completed a Custom project in 2015. In 2015, this program closed and was combined with Lodging Savers into a single “Hospitality” program for 2016.

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, K-12 schools, colleges, universities, and trade/technical schools. The program works with customers to identify both Deemed and Custom EE measures. It also provides technical analysis and recommendations and provides 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.

Commercial Mid-Market Program (IDEEA 365)

Implementer: Lincus

The Commercial Mid-Market Program (CMMP) was focused primarily on commercial mid-market customers with peak demand between 200 kW and 500 kW. The program was effectively closed at the end of 2015 and was scheduled to completely shut down on 3/31/16.

Commercial Real Estate Outreach (IDEEA 365)

The Waypoint Connect program provides comprehensive analysis of multiple buildings within property ownership or management and originates energy efficiency retrofit projects. This innovative program leverages existing market infrastructure and data to overcome barriers with traditional energy efficiency programs.

Data Center Air Flow and Temperature Optimization Program (IDEEA 365)

Implementer: CLEAResult

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

2015 Strategies and Successes

The Data Center Plus Program launched in April 2014. Data Center Plus works with customers to conduct preliminary screening calls and in-depth assessments that help the customer identify energy-saving best practices and develop specific plans of action to implement EE improvements.

Building on customer leads, screenings, and data center assessments, the program has built a robust pipeline of projects with 2,530,000 kWh in estimated savings. However, it has been challenging converting these projects to completion. In response to customer feedback and recruitment challenges, Data Center Plus has adjusted the program process and requirements to remove barriers that were preventing program participation.

Energize Schools Program (IDEEA 365)

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).

2015 Strategies and Successes

When SEI learned 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 2015 with 47 schools throughout PG&E service territory. Students learned valuable lessons while conserving 159,000 kWh throughout the three-week period. Energize Schools assisted more than 20 schools with Prop 39 planning and student education.

Analytics-Enabled Retrocommissioning (AERCx) Programs (IDEEA 365)

Implementers: Enovity, Nexant, CLEAResult

PG&E's Government and Community Partnerships team administers four AERCx programs using SmartMeter™ data. These programs target specific industry sectors or community needs and prioritize opportunities by processing data through Virtual Energy Assessment (VEA) software providers.

The AERCx Program seeks to overcome low program penetration with existing building tune-up programs in small to mid-size commercial businesses through SmartMeter™ data and partnerships with VEAs. AERCx remotely identifies energy waste by uncovering how a building should operate in comparison to user consumption with an efficient model under the same conditions. Opportunities are ranked for the highest savings potential, and remote building assessments are performed before work begins on-site. Then, on-site customer visits are performed to validate energy savings opportunities and ensure that recommendations are in-line with customers' energy needs and priorities. Customers are presented with an easy-to-follow report that includes an explanation of savings potential and highlights where further investigation is needed. These assessments can also inform opportunities for EE 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.

School Energy Efficiency
2015 Program Highlights

- In response to **Proposition 39 (Prop 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 **41 local educational agencies** in 2015.

Dynamic Gas Scavenging System Program (IDEEA 365)

Implementer: Mazzetti

The Dynamic Gas Scavenging System (DGSS) Program was designed to deliver energy savings and demand reduction through the installation of an interface for anesthesia machines in operating rooms. This program was launched in February 2014. However, PG&E requested closure of the program, effective December 31, 2015, because it had not gained any market traction, completed any projects, or claimed any energy savings.

Laboratory Fume Hoods Program (IDEEA 365)

Implementer: McKinstry

The Laboratory Fume Hoods Program installed automated controls for laboratory fume hoods. The program attempted to commercialize and create market adoption of innovative technologies in universities and companies that have chemical fume hoods that run constantly. However, the implementer requested the closure of this program due to a lack of uptake in the market. Namely, the focus on fume hoods proved too narrow and the project paybacks were too long for the predominantly educational and biopharmaceutical customers in this program. Since its launch in 2014, only one project was

submitted for review, representing an expected 25 percent of the original kWh goal, and 28 percent of the therm goal. Thus, McKinstry and PG&E mutually agreed to close the program.

School Energy Efficiency Program

Implementer: CLEAResult

The School Energy Efficiency (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.

2015 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. This structure enables the SEE Program to work with the school district without triggering the unique construction, bidding and wage requirements of California public school districts. In 2015, SEE had particular success assisting schools with upgrading swimming pool heaters, VFDs, and covers.

RightLights Direct Install 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. The RightLights Direct Install Program closed in 2015.

Bridges to Energy Sector Opportunities Program (IDEEA 365)

Implementer: ICF

Bridges to Energy Sector Opportunities (BESO) was a non-resource workforce development program to educate and train contractors on financing and sales approaches for small and medium-sized businesses. This Commercial IDEEA 365 program has been closed. However, Workforce, Education, and Training (WE&T) is currently developing a strategy to more comprehensively support workforce inclusion in the future alongside other existing efforts. As part of that effort, WE&T will revisit this program model, and components thereof, to evaluate its potential as part of the portfolio in 2017 and beyond.

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.

PG&E's 2015 Industrial and Agricultural Third Party Programs		
Industrial	**Oil**	**Water Agencies**
• Heavy Industry Energy Efficiency • Industrial Retrocommissioning • Compressed Air • Industrial Refrigeration Performance Plus • Intelligent Energy Efficiency	• Energy Efficiency Services for Oil and Gas Production • Refinery Energy Efficiency	• California Wastewater Optimization • Water Infrastructure and System Efficiency
Dairies and Other Ag	**Wineries & Crop Production**	**Food Processing**
• Dairy Industry Resource Advantage • California Dairy Energy Efficiency • Light Exchange	• Wine Industry Efficiency Solutions Program • Low Pressure Irrigation	• Comprehensive Food Processing Audit and Resource Efficiency • Process Wastewater Treatment EM Program for Agricultural Food Processing

Industrial Third Party Programs

California Wastewater Process Optimization Program (CalPOP)

Implementer: QuEST

CalPOP targets wastewater treatment plants and provides facility audits, engineering assistance, project management support and financial incentives based on potential energy savings. The program helps wastewater treatment facilities optimize their processes to reduce energy usage. CalPOP identifies energy savings opportunities related to surface aeration processes (delivered DO sensors, controls, and training) as well as the optimization of all treatment type equipment and process eligible for IOU incentives.

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. Changes to the energy standards, in combination with the Energy Division's (ED's) application of those changes to compressed air measure energy savings calculations resulted in an insufficient number of measures that this program is able to offer. This program was closed December 31, 2015.

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.

2015 Strategies and Successes
This program has been ongoing since 2006 and targets oil and gas producers of all types, providing focused assessments, calculation and documentation support, and financial incentives based on actual energy use reductions, It has convinced a risk-adverse customer base, to adopt changes through education and persistent follow through with customers to implement projects.

This year the program leveraged a promotional program brochure that served to inform customers of qualifying projects and Energy Efficiency measures, participation process, and incentive amounts to reach out, introduce, stimulate and recruit eligible oil and gas producers to participate. The program also utilized PG&E Account Managers, Trade Allies (equipment vendors), and industry information to create customer contact lists, and participated in industry associations and other forums to reach out to qualifying customers.

Opportunities Moving Forward
The oil industry, with its history of booms and busts, is currently in one of its deepest downturn since the 1990s. Earnings are down for companies that made significant profits in recent years, leading them to suspend drilling operations, sharply cut investment in exploration and production, and reduce non-essential operating budgets. The program will continue the push for adoption of new technologies (e.g. MotorWise™); adjust marketing efforts to focus the communicated benefits of the program on avoided energy costs rather than on available technology, and will identify ways to expedite project commitment approvals so customers can act quickly once a qualified project has been identified.

Heavy Industry Energy Efficiency Program
Implementer: Lockheed Martin Corporation
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 and recently added Food Processing facilities in the Central Valley.

2015 Strategies and Successes
The Lockheed Martin Energy (LME) HIEEP program and PG&E have worked collaboratively for years to enhance and streamline process and program flow. Through close collaboration HIEEP, in conjunction with PG&E, have enhanced customer service throughout the PG&E service territory by strategically placing field offices closer to the customer. The opening of our Bakersfield, CA office has resulted in greatly improved timeliness and responsiveness to PG&E's Central Valley customers while at the same time allowing increased collaboration on a variety of energy efficiency projects with both PG&E and their end use customers.

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 a composite score of 4.41 out of 5.0. One customer notes "It's very evident that <LME> is dedicated to ensuring the job is completed in a professional manner. <LME> has

always been committed to the satisfaction of <the customer> and our staff. We very much appreciate this quality."

Opportunities Moving Forward

In 2015, HIEEP worked closely with PG&E to understand, quantify and qualify projects that complied with the Commission Staff guidance. HIEEP expects 2016 and outlying years to be just as successful as more and more opportunity is realized with the expanded NAICS codes into Central Valley Food Processors

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.

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.

2015 *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 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.

Opportunities Moving Forward

The IRCx program has begun developing projects with biotech customers focusing on their process cooling systems. These are new type of projects for the program with exciting energy saving potential for these customers which have been underserved in the past.

Intelligent Energy Efficiency Program

Implementer: Ameresco, Inc.

The Intelligent Energy Efficiency Program installed monitoring equipment and set up dashboard analysis for processing systems in industrial facilities followed by EE project implementation. The program did not install, nor commit, any projects for PG&E's customers. Ameresco's management expressed no interest in continuing the program and agreed to contract termination. This program was closed at the end of 2015.

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.

2015 Strategies and Successes

During 2015, Nexant has introduced new energy efficiency technologies in refineries and has been successfully educating customers on the benefits of these new technologies. These new technology projects have been successfully installed in several refineries

Opportunities Moving Forward

The biggest challenge in program implementation is the sharp decline in oil prices. Funding for energy efficiency projects has been largely and inevitably reduced by each company and many projects have been delayed. The program will focus on projects with more rapid turnaround time, projects that were delayed but may still be installed in 2016.

Another challenge in program implementation is the customers' turnaround schedules for project installations. Most of the time, because of the nature of the project, there is only a limited window for project installation. If that window is missed, the project is delayed until the following turnaround. With longer and more stringent review process, sometimes it is difficult to meet customer's needs and project approval processes so the program will to explore options for further expediting projects.

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 through measures such as pump sequencing and system optimization through hydraulic modeling.

2015 Strategies and Successes

Launched in February 2014, the WISE Program has continued to develop water system benchmarks, project prioritization lists, and energy audits to demonstrate cost-effective EE opportunities with customers. In addition, the WISE program has evaluated energy intensities of various water system components and the embedded energy in customer water and wastewater systems through Water Energy Nexus reports. The program targeted system optimization projects aimed at long term EE improvements.

Lincus hosted a Water Energy Nexus Seminar on November 17th at the PG&E Pacific Energy Center in San Francisco to show new and existing customers how they could identify various ways to save energy and lower their utility bills through cost-effective system improvements. WISE program case studies and a PG&E WISE flyer were among the items distributed to provide examples of system efficiency improvement opportunities.

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. The customer is currently investigating further system optimization opportunities through the WISE program. For another customer, WISE was able to complete multiple pump efficiency improvement projects in 2015 that resulted in about 3.5 million kWh and 450 kW of energy savings. As a result, the customer is considering a WISE proposal to expand efforts and drive further pump efficiency improvements and system optimization opportunities within their water distribution system. These proposed projects have shown high level potential of over 10 million kWh worth of energy savings.

Opportunities Moving Forward

Most water and wastewater customers show tremendous opportunities to reduce the energy consumption of their systems. Although customers operate effective, reliable and safe water systems, little emphasis is put on energy efficiency of their systems. Through the technical support and incentives provided through the WISE program, enrolled customers are identifying cost effective opportunities to meet their customer demands while reducing energy use. Furthermore, depending on the embedded energy of their system, water conservation measures may yield significant energy savings as well. Since WISE has been extended, the program will continue to work with new and existing customers to develop long term system transformation projects that will include pump efficiency improvement projects, pump sequencing optimization, water system optimization through the use of hydraulic models, among other comprehensive energy efficiency measures.

Agricultural Third Party Programs

Dairy Energy Efficiency Program (DEEP)

Implementer: EnSave Inc.

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

Primary program measures were sunset in 2015 which drove the program TRC from 1.27 down to 0.98. Additionally, PG&E determined that the market did not need multiple dairy programs, but rather a comprehensive offering that includes calculated and deemed measure options available to all customer sizes. Consolidating program offerings will capture administrative efficiencies and reduce market confusion and competition. This program was closed December 31, 2015.

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.

Refrigeration system upgrades remain the single largest opportunity for achieving energy savings at dairy sites. In 2015 it was discovered that customers had challenges to installing refrigeration system upgrade recommendations due to vendor lack of knowledge and supply chain issues. Subsequently DIRA developed and held a meeting to train refrigeration vendors on the program process, documentation requirements and the details of the program recommendations. This event also included manufacturers of key refrigeration components to help bridge the gaps between program recommendations and customer ability to install high energy and water saving measures. As follow up, the program issued a monthly newsletter to refrigeration vendors to keep them engaged and assigned dedicated staff to vendor outreach. This led to a significant increase in the number of refrigeration projects added to the program forecast and a tripling of refrigeration vendors engaging the program.

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.

DIRA Saves Energy by Keeping Our Cows and Milk Cool

The first Unitary Fluid Cooler refrigeration systems upgrade at a dairy took place in 2015, with a total of 3 installed year end. Total water savings associated with installed project calculated to be 535,541,000 gallons per year with an additional 239,000,000 gallons per year tied to the forecast at the close of 2015.

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.

In 2015 the program focused on marketing through direct outreach to customers, working closely with PG&E account representatives, and educating equipment vendors about eligible measures as applied to their equipment and services. The program also utilized Industry associations and other forums such as the California League of Food Processors (CLFP) to reach out to qualifying customers.

One of the biggest challenges has been the barrier to entry for customers pursuing calculated projects. The length of the pre-approval cycle has increased significantly to a level where it is discouraging participation and installation of energy efficiency projects.

Light exChange Program

Implementer: Richard Heath and Associates (RHA)

The Light exChange Program worked to identify qualifying rural customers in Agricultural communities within climate zone 11 to provide a no-cost replacement of interior and exterior lighting. PG&E identified this program as not being cost-effective in 2014. In late 2014 and early 2015, PG&E worked with the implementer to identify and add new measures to broaden offerings to underserved agricultural customers and implement a more cost-effective program. However, the program continued to see a lack of market uptake. This program was closed December 31, 2015.

Low-Pressure Irrigation Efficiency Program

Implementer: Staples Energy

Originally launched in 2014, the Low-Pressure Irrigation Efficiency Program provided incentives to small and medium size growers for irrigation systems improvements that reduced system operating pressure. Primary program measures were sunset in 2015 which drove the program TRC down to 0.51. This program was closed December 31, 2015.

Process Wastewater Treatment Program for Agricultural Food Processing

Implementer: BASE Energy, Inc.

The objective of the Process Wastewater Treatment EM Program is to assist 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.

Wine Industry Efficiency Solutions Program

Implementer: CLEAResult

The Wine Industry Efficiency Solutions (WIES) Program serves the wine production market through a comprehensive program model that identifies and evaluates energy saving opportunities and provides custom incentives and deemed rebates.

Tables

Section 1
Energy Savings

Table 1

A	B	C	D	E	F
Table 1: *Pacific Gas and Electric Company 2014 Energy Efficiency Programs Annual Report – June 2015* *Electricity and Natural Gas Savings and Demand Reduction*					
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)	815	599	136%	31%	1,595
PG&E Codes and Standards Advocacy (net)	254	254	100%	10%	
2014 Energy Savings (GWh) – Annual (1)					
PG&E Programs (gross)	843	593	142%	32%	513
PG&E Codes and Standards Advocacy (net)	239	239	100%	9%	
2015 Energy Savings (GWh) – Annual (1)					
PG&E Programs (gross)	772	697	111%	29%	(879)
PG&E Codes and Standards Advocacy (net)	621	283	220%	23%	
TOTAL Energy Savings (GWh) - Annual (3) (gross)	**3,544**	**2,665**	**133%**	**133%**	**(879)**
2013 Energy Savings (GWh) – Lifecycle					
PG&E Programs	14,929				
2014 Energy Savings (GWh) – Lifecycle					
PG&E Programs	14,973				
2015 Energy Savings (GWh) – Lifecycle					
PG&E Programs	29,006				
TOTAL Energy Savings (GWh) – Lifecycle (4)	**58,907**				
2013 Natural Gas Savings (MMth) – Annual (1)					
PG&E Programs (gross)	29	21	140%	51.2%	28
PG&E Codes and Standards Advocacy (net)	0.07	0.07	100%	0.1%	
2014 Natural Gas Savings (MMth) – Annual (1)					
PG&E Programs (gross)	29	20	143%	51%	(2)
PG&E Codes and Standards Advocacy (net)	0.55	0.55	100%	1.0%	
2015 Natural Gas Savings (MMth) – Annual (1)					
PG&E Programs (gross)	22	14	153%	38.1%	(25)
PG&E Codes and Standards Advocacy (net)	1.50	1.1	136%	2.6%	
TOTAL Natural Gas Savings (MMth) – Annual (3) (gross)	**82**	**57**	**144%**	**144%**	**(25)**
2013 Natural Gas Savings (MMth) – Lifecycle					
PG&E Programs	371				
2014 Natural Gas Savings (MMth) – Lifecycle					
PG&E Programs	360				
2015 Natural Gas Savings (MMth) – Lifecycle					
PG&E Programs	295				
TOTAL Natural Gas Savings (MMth) – Lifecycle (4)	**1,025**				
2013 Peak Demand Savings (MW) (1)					
PG&E Programs (gross)	156	114	137%	36%	245
PG&E Codes and Standards Advocacy (net)	31	31	100%	7%	
2014 Peak Demand Savings (MW) (1)					
PG&E Programs (gross)	162	100	162%	38%	50
PG&E Codes and Standards Advocacy (net)	32	32	100%	8%	
2015 Peak Demand Savings (MW) (1)					
PG&E Programs (gross)	152	110	138%	35%	(245)
PG&E Codes and Standards Advocacy (net)	143	44	325%	33%	
TOTAL Peak Demand savings (MW) - Annual (3) (gross)	**676**	**431**	**157%**	**157%**	**(245)**

(1) All annual energy savings values are on a gross basis except Codes and Standards (C&S), which are net.

(2) Installed savings for PG&E include Energy Savings Assistance (ESA) Program; Bay Area Regional Energy Network (BayREN),and Marin Clean Energy (MCE) as provided.

(3) The Total Savings reported on this table represent the gross program savings and include C&S for the 2013-2015 program cycle.
(4) Lifecycle savings include C&S 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.

Table 2

A	B	C	D	E	F	G	H	I
Table 2:								
Emission Reductions								
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	814,931	8,349,165	203	2,410	-	-	43	412
2013 Total	**814,931**	**8,349,165**	**203**	**2,410**	-	-	**43**	**412**
PG&E	835,582	8,320,801	168	2,066	-	-	49	444
2014 Total	**835,582**	**8,320,801**	**168**	**2,066**	-	-	**49**	**444**
PG&E	1,321,268	15,368,774	229	2,977	-	-	80	905
2015 Total	**1,321,268**	**15,368,774**	**229**	**2,977**	-	-	**80**	**905**
2013-2015 3 Year Cycle Total	**2,971,781**	**32,038,741**	**599**	**7,454**	-	-	**172**	**1,762**

(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 Energy Savings Assistance (ESA) Program, BayREN, and MCE.

Table 2 reports PG&E's 2015 EE portfolio incremental environmental impacts. The E3 calculator (CET Version 15.2.0 with 15.2.1 patch) was updated by the Commission Staff consultant for the CO_2, nitrogen oxide and particulate matter under 10 microns (PM10) calculations.

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 those that were most successful in reducing electric (kWh) and gas (therms) usage.

Table 3

Table 3: 2015 Expenditures (1)

Summary of Portfolio Expenditures	Adopted Program Budget (5)	Total Annual Expenditures	Percentage of Portfolio Budget	Percentage of Total Annual Expenditures
Total 2015 EE Program Expenditures				
Administrative-Implementer	116,548,447	5,409,854	0.5%	1.3%
Administrative-IOU Support		46,011,557	3.9%	11.1%
Marketing	68,226,558	35,060,857	3.0%	8.4%
Rebates/Incentives/Direct Install (2)	497,760,182	158,517,252	13.5%	38.1%
Direct Implementation	493,273,795	170,838,211	14.5%	41.1%
Total EE Program Expenditures	**$ 1,175,808,982**	**$ 415,837,731**	**35.4%**	**100.0%**
Core Programs				
Administrative-IOU Support	48,396,214	25,221,261	2.1%	6.1%
Marketing	47,609,224	25,986,254	2.2%	6.2%
Rebates/Incentives/Direct Install	303,885,825	105,425,703	9.0%	25.4%
Direct Implementation	248,374,112	94,976,809	8.1%	22.8%
Sub total	$ 648,265,375	$ 251,610,028	21.4%	60.5%
3P Programs				
Administrative-Implementer	32,682,264	1,980,536	0.2%	0.5%
Administrative-IOU Support		11,486,591	1.0%	2.8%
Marketing	5,442,930	5,507,763	0.5%	1.3%
Rebates/Incentives/Direct Install	109,667,882	31,127,927	2.6%	7.5%
Direct Implementation	121,254,027	31,372,651	2.7%	7.5%
Sub total	$ 269,047,103	$ 81,475,468	6.9%	19.6%
LGP Programs				
Administrative-Implementer	35,469,969	2,641,728	0.2%	0.6%
Administrative-IOU Support		9,303,705	0.8%	2.2%
Marketing	15,174,404	2,698,012	0.2%	0.6%
Rebates/Incentives/Direct Install	83,206,475	21,963,622	1.9%	5.3%
Direct Implementation	80,529,734	31,617,620	2.7%	7.6%
Sub total	$ 214,380,582	$ 68,224,688	5.8%	16.4%
Non-IOU Programs (3)				
Administrative-Implementer	-	787,589	0.1%	0.2%
Administrative-IOU Support	-	-	0.0%	0.0%
Marketing	-	868,828	0.1%	0.2%
Rebates/Incentives/Direct Install	1,000,000	-	0.0%	0.0%
Direct Implementation	43,115,922	12,871,130	1.1%	3.1%
Sub total	$ 44,115,922	$ 14,527,547	1.2%	3.5%
EM&V				
EM&V IOU	14,430,215	3,722,532	7.2%	26.2%
EM&V Joint Staff	37,057,010	10,473,870	20.3%	73.8%
Total EM&V Expenditures	**$ 51,487,225**	**$ 14,196,403**	**27.6%**	**100.0%**
On-Bill Financing Loan Pool (4)	**$ 42,000,000**	**$ 6,532,126**	**15.6%**	**100.0%**
GRAND TOTALS	**$ 1,269,296,207**	**$ 436,566,260**	**34.4%**	**100.0%**

(1) Rebates/Incentives/Direct Install include expenditures accrued but not paid as of December 31, 2015.

(2) Non-IOU Programs represent PG&E's payments to BayREN and MCE.
(3) OBF Loan Pool represents loans issued and repaid.
(4) 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 Incurred in 2015 (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				
Administrative-Implementer	-	8,558	0.0%	0.3%
Administrative-IOU Support		-	0.0%	0.0%
Marketing	-	17,166	0.0%	0.5%
Rebates/Incentives/Direct Install (2)	63,695,942	3,228,164	4.3%	94.8%
Direct Implementation	10,729,419	150,805	0.2%	4.4%
Total EE Program Expenditures	**$ 74,425,361**	**$ 3,404,694**	**4.6%**	**100.0%**
Core Programs				
Administrative-IOU Support	-	-	0.0%	0.0%
Marketing	-	-	0.0%	0.0%
Rebates/Incentives/Direct Install	50,187,903	3,250,216	4.4%	95.5%
Direct Implementation	4,775,000	5,323	0.0%	0.2%
Sub total	$ 54,962,903	$ 3,255,540	4.4%	95.6%
3P Programs				
Administrative-Implementer	-	8,558	0.0%	0.3%
Administrative-IOU Support	-	-	0.0%	0.0%
Marketing	-	17,166	0.0%	0.5%
Rebates/Incentives/Direct Install	8,308,038	-	0.0%	0.0%
Direct Implementation	5,954,419	145,482	0.2%	4.3%
Sub total	$ 14,262,458	$ 171,206	0.2%	5.0%
LGP Programs				
Administrative-Implementer	-	-	0.0%	0.0%
Administrative-IOU Support	-	-	0.0%	0.0%
Marketing	-	-	0.0%	0.0%
Rebates/Incentives/Direct Install	5,200,000	(22,052)	0.0%	-0.6%
Direct Implementation	-	-	0.0%	0.0%
Sub total	$ 5,200,000	(22,052)	0.0%	-0.6%
EM&V (3)				
EM&V IOU	-	567,149	n/a	25.9%
EM&V Joint Staff	-	1,624,126	n/a	74.1%
Total EM&V Expenditures	**$ -**	**$ 2,191,275**	n/a	**100.0%**
GRAND TOTALS	**$ 74,425,361**	**$ 5,595,969**	**7.5%**	**100.0%**

(1) Table 3.1 has been added to show PG&E's authorized pre-2013 program carryover funds spent in 2015.
(2) Incentives/Rebates/Direct Install includes expenditures accrued but not paid as of December 31, 2015.
(3) EM&V includes 2015 expenditures from all pre-2013 EE program cycles.

Section 4
Cost-Effectiveness

Table 4

Table 4:
Cost Effectiveness

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	$ 611,713,994	$ 861,105,687	$ 249,391,693	1.41	$ 370,591,312	2.32		0.07	0.54
2013 TOTAL	**$ 611,713,994**	**$ 861,105,687**	**$ 249,391,693**	**1.41**	**$ 370,591,312**	**2.32**	**$ -**	**$ 0.07**	**$ 0.54**
PG&E	$ 571,494,579	$ 786,650,015	$ 215,155,436	1.38	$ 383,217,955	2.05		0.07	0.55
2014 TOTAL	**$ 571,494,579**	**$ 786,650,015**	**$ 215,155,436**	**1.38**	**$ 383,217,955**	**2.05**	**$ -**	**$ 0.07**	**$ 0.55**
PG&E	$ 850,090,260	$ 1,120,166,630	$ 270,076,370	1.32	$ 393,057,109	2.85		0.05	0.41
2015 TOTAL	**$ 850,090,260**	**$ 1,120,166,630**	**$ 270,076,370**	**1.32**	**$ 393,057,109**	**2.85**	**$ -**	**$ 0.05**	**$ 0.41**

(1) The cost-effectiveness calculations are based on the actual accomplishments recorded in 2013, 2014, and 2015. Includes ESPI payment of $21.6M recorded in 2013 per Resolution G-3491 (D. 12-12-032), $36.3M recorded in 2014 per Resolution G-3497 (D. 12-12-032 and D. 13-09-023) and $24.7M recorded in 2015 per Resolution G-3510, Codes and Standards costs and benefits include installed savings for Energy Savings Assistance (ESA) Program; program costs for Bay Area Regional Energy Network (BayREN) as provided to PG&E via e-mail on April 12, 2016; and Marin Clean Energy (MCE) as reported in their December 2013 Monthly Report, 2014 Annual Report, and 2015 values as provided to PG&E via e-mail on April 12 and April 14, 2016. Includes CFLs rebated in 2010-12 that were installed in 2013-14. Excludes ESA Program costs and benefits, Statewide Emerging Technologies Program costs per D.12-11-015 (p.52). The Financing Program OBF Loan Pool amounts (loans issued and repaid) of $9.7M for 2013, and $10.1M for 2014, and $6.5M for 2015 are excluded 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% market spillover in cost-effectiveness calculations per D.12-11-015 (OP 37) excluding Codes and Standards, and CFLs rebated in 2010-12 that were installed in 2013-14.

(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.

(5) PAC cost per kWh or per therm is PAC cost per annual net kWh or annual net therm respectively per CET based definition provided by CPUC to PG&E via e-mail on April 8, 2016.

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 (CET Version 15 2.0 with 152.1 patch) 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, and approved by, the CPUC. The effective useful lives and net-to-gross values are taken from DEER where applicable and are otherwise documented in approved 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 ($)**
2015					
PG&E	$ 0.1729	$ 1.4068	227,477,719		2,399,139,255
PG&E Average	**$ 0.1729**	**$ 1.4068**	**$ 227,477,719**		**$ 2,399,139,255**

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 3/1/15) 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 2015 reported savings and PG&E's 2015electric 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.

Section 6
Green Building Initiative

Table 6

Table 6: Green Building Initiative (1, 2)	Expenditures (3)	GWH Goal	GWH Annual	GWH % of Goal	MW Goal	MW Annual	MW % of Goal	MMth Goal	MMth Annual	MMth % of Goal
2015										
PG&E	$ 44,022,225	N/A	220	N/A	N/A	37	N/A	N/A	6	N/A
PG&E	**$ 44,022,225**		**220**			**37**			**6**	

(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 2015 for the Governor's Green Building Initiative (GBI). In 2015, 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 Statewide EE program offerings, as well as 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 do not 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.

IOU statewide institutional continue, in support of reducing energy use in state-owned buildings and B-18-12.

Section 7
Shareholder Performance Incentives

2015 requested and approved shareholder earnings t are from EE activities performed in program years 2013 and 2014.

The mechanism and payment associated with 2013 and 2014 program activities were 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.[2] The ESPI mechanism was established with the goal and objective to encourage and motivate IOUs to invest in energy efficiency programs that are quantifiable, as well as other non-quantifiable programs that help transform the market. The four components contributing to 2015 ESPI earnings are:

1. **Component 1**: A performance award for energy savings of up to 9% of the resource program budget (excluding codes and standards program budgets),
2. **Component 2:** A performance award for ex ante review activities of up to 3% of resource program budget (excluding codes and standards program budgets),
3. **Component 3:** A management fee for codes and standards (C&S) programs of up to 12% of codes and standards program budgets, and
4. **Component 4:** A management fee for non-resource programs of up to 3% of non-resource program budgets.

In 2015, the ESPI mechanism required two Advice Letters requesting incentive payments after the implemented EE Program Year. PG&E filed an Advice Letter on June 30, 2015 requesting an award for Program Year 2014 activities, excluding custom projects and uncertain measures. PG&E filed a second Advice Letter on September 15, 2015 requesting an award for certain EE Program Year 2013 activities including custom projects, uncertain measures, and a true-up of the 2013 incentive payment.

The earnings requested in 2015 were approved in Resolution G-3510 in response to PG&E's Advice Letters 3606-G/4659-E and PG&E AL 3632-G/4705-E, per direction from D.13-09-023. The table below provides the final payment awarded to PG&E for program years 2013 and 2014.

Program Year for Activities Paid	Year Incentive Requested and Approved	Authorizing Decision	Shareholder Incentive
2013	2015	Resolution G-3510	$14.3M
2014	2015	Resolution G-3510	$10.3M

[2] 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

Table 8:								
Annual Savings By End-Use (1) (2)								
2015	GWH	% of Total		MW	% of Total		MMTh = 1,000,000 therms	% of Total
Residential	**330.10**	**24%**		**70.60**	**24%**		**5.39**	**23%**
Appliances	7.93	1%		1.64	1%		0.57	2%
Consumer Electronics	0.57	0%		0.11	0%	-	0.01	0%
Cooking Appliances	-	0%		-	0%		-	0%
HVAC	21.13	2%		11.16	4%		0.41	2%
Lighting	128.78	9%		18.63	6%	-	1.61	-7%
Pool Pump	9.34	1%		1.33	0%		-	0%
Refrigeration	25.26	2%		5.60	2%		0.19	1%
Water Heating	0.69	0%		0.15	0%		0.25	1%
Other	136.40	10%		31.98	11%		5.59	24%
Nonresidential	**409.44**	**29%**		**75.60**	**26%**		**14.25**	**61%**
HVAC	80.29	6%		13.25	4%		4.10	61%
Lighting	135.09	10%		21.31	7%	-	0.50	18%
Office	1.94	0%		0.15	0%		0.00	-2%
Process	130.19	9%		28.79	10%		8.03	0%
Refrigeration	29.12	2%		4.10	1%		0.78	34%
Other	32.80	2%		8.01	3%		1.84	3%
Energy Savings Assistance Program	**31.96**	2%		5.92	2%		2.21	8%
Codes & Standard Energy Savings	**620.97**	45%		142.81	48%		1.50	9%
PG&E TOTAL 2015 PROGRAM SAVINGS (3)	**1,392.47**	**100%**	-	**294.93**	**100%**	-	**23.35**	**101%**

(1) All energy savings values are on a gross basis except C&S, which are net.
(2) Includes ESA Program, BayREN savings as provided to PG&E via e-mail on April 12, 2016; and MCE savings provided on April 12 and April 14, 2016.
(3) The Total Savings reported on this table represent the gross program savings and include C&S which are reported on a net basis.

Table 8 shows the 2015 annual savings of all programs by end use. The energy savings recorded by PG&E's EE portfolio comply with the CPUC's policy rules in the Energy Efficiency Policy Manual, Version 5.0, as well as with subsequent Commission decisions, rulings, dispositions, and other Commission staff guidance.

The Energy Savings Assistance (ESA) Program energy savings reported above are from the ESA Program 2015 Annual Report provided to the Commission in May 2016. ESA measure savings are defined in D.12-08-044.

Section 9
Commitments

Table 9

A	B	C	D	E
Table 9:				
Commitments (1)				
	Commitments Made in the Past Year with Expected Implementation ***by*** December 2015			
	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 2015			
	Committed Funds (2)	Expected Energy Savings		
2013-2015	$	GWH	MW	MMth
PG&E	$ 115,018,985	479	94	123
PG&E Total	**$ 115,018,985**	**479**	**94**	**123**

(1) All energy savings values 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 2015.

Table 9 shows the incentive commitments at the end of 2015 for EE projects that are expected to be completed after December 2015. All nonresidential projects use 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 December 2015.

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		
PGE210931	Residential Energy Efficiency Loan Assistance Program (REEL, formerly SFLP)	5/292015	
PGE210932	Energy Financing Line Item Charge	11/14/2014	
PGE210933	Master-Metered Multifamily Financing Pilot	5/29/2015	
PGE210934	OBR Small Business Lease Providers Pilot	5/29/2015	
PGE210935	OBR Small Business Loan Pilot	5/29/2015	
PGE210936	Off-Bill Small Business Lease Providers Pilot	5/29/2015	
PGE210937	On Bill Repayment (OBR) for Medium and Large Business	5/29/2015	
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	Strategic Energy Resources		
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		

Program ID	Program Name	Date Added (new programs)	Date Removed
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		12/31/2015
PGE210112	School Energy Efficiency		
PGE210113	Energy Fitness Program		12/31/2015
PGE210114	Energy Savers		12/31/2015
PGE210115	RightLights		12/31/2015
PGE210118	Furniture Store Energy Efficiency		
PGE210119	Light Emitting Diode (LED) Accelerator		
PGE210122	CasinoGreen		12/31/2015
PGE210123	Healthcare Energy Efficiency Program		
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	13/31/2015
PGE210132	CLEAResult (RSG) High Efficiency Water Heater	7/2/2013	1/4/2015
PGE210133	Staples Low-Pressure Irrigation	7/2/2013	12/31/2015
PGE210134	ICFI Bridges To Energy Sector	1/30/2014	12/31/2015
PGE210135	Lincus WISE	2/5/2014	
PGE210136	McKinstry Laboratory Fume Hoods	2/7/2014	12/31/2015
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	12/31/2015
PGE210141	Lincus Commercial Mid-Market	2/24/2014	3/31/2016
PGE210142	Ameresco Intelligent Energy Efficiency Program	2/05/2014	12/31/2015
PGE21016	Air Care Plus		12/31/2015
PGE21017	Boiler Energy Efficiency Program		
PGE21018	EnergySmart Grocer		
PGE210310	Dairy Industry Resource Advantage program		12/31/2015
PGE210311	Process Wastewater Treatment Energy Management (EM) Program for Agricultural Food Processing		
PGE21035	Dairy Energy Efficiency Program		12/31/2015
PGE21036	Industrial Refrigeration Performance Plus		
PGE21037	Light Exchange Program		12/31/2015

Program ID	Program Name	Date Added (new programs)	Date Removed
PGE21038	Wine Industry Efficiency Solutions		12/31/2015
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		12/31/2015
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

The following EE-related rulemakings, decisions and resolutions were issued by the CPUC, informing EE activities in 2015.

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.

Advice Letters

PG&E filed the following advice letters related to EE in 2015.

1) Incentive Level for Gas and Electric Griddles in the Statewide Commercial EE Program:
   - On 1/6/2015, PG&E filed Supplemental Advice 3538-G-A/4544-E-A Request of Pacific Gas and Electric Company, San Diego Gas & Electric Company and Southern California Gas Company to Increase the Incentive Level for Gas and Electric Griddles offered in the Statewide Commercial Energy Efficiency Program. This advice letter was approved effective 1/1/2015.
     http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3538-G-A.pdf

2) Regional Energy Network and Community Choice Aggregator Contracts:

- On 1/21/2015, PG&E filed Advice 3553-G/4566-E – *Advice Letter in Compliance with Ordering Paragraph 29 of 2015 Energy Efficiency Decision 14-10-046.* This advice letter was approved effective 1/21/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3553-G.pdf

3) Regional Energy Network and Community Choice Aggregator Contracts:

- On 2/10/2015, PG&E filed Second Advice Letter in compliance with Ordering Paragraph 29 of 2015 Energy Efficiency Decision 14-10-046. This advice letter was approved effective 2/10/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3561-G.pdf

4) Zero Net Energy Pilot for Local Educational Agencies and Community Colleges:

- On 2/13/2015, PG&E, on behalf of the IOUs, filed Joint Advice PG&E 3563-G/4587-E – *Zero Net Energy Pilot for Local Educational Agencies and Community Colleges Per Energy Efficiency*, in compliance with D.14-10-046, OP7. This advice letter was approved effective 3/15/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3553-G.pdf

5) Statewide EE Workforce Education and Training Program Implementation Plan Addendum

- On 2/23/2015, PG&E, on behalf of the IOUs, filed Joint Advice PG&E 3567-G/4592-E for Approval of the Statewide Energy Efficiency Workforce Education and Training Program Implementation Plan Addendum in compliance with Commission Decision 14-10-046, Ordering Paragraph 17. This advice letter was approved effective 3/25/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3567-G.pdf

6) Updates to the 2015 ESPI Mechanism Earnings Coefficient and Caps:

- On 2/23/2015, PG&E, on behalf of the IOUs, filed Joint Advice 3566-G/4591-E to recalibrate the 2015 Efficiency Savings and Performance Incentive (ESPI) mechanism earnings coefficients and caps in compliance with D.14-10-046, Ordering Paragraph 20. This advice letter was approved with modifications on 7/30/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3566-G.pdf

7) PG&E's 2015 EE Portfolio:

- On 2/25/2015, PG&E filed Second Supplemental Advice 3541-G-B/4550-E-B to establish 2015 Energy Efficiency Portfolio Advice Letter In Compliance With Decision 14-10-046, Ordering Paragraph 16.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3541-G-B.pdf

8) New Gas and Electric EE Financing Balancing Account:

- On 4/24/2015, PG&E filed Advice 3589-G/4624-E to establish a New Gas and Electric Energy Efficiency Financing Balancing Account. This advice letter was approved effective 6/25/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3589-G.pdf

9) BayREN's Multifamily Program Funds:

- On 5/12/2015, PG&E filed Advice 3595-G/4636-E Request Authority to Use PG&E's Energy Efficiency 2013-2015 Program Funds to Increase Funds Available to the San Francisco Bay Area Regional Energy Network's Multifamily Program.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3595-G.pdf

10) Implementation of EE Finance Program Pilots in Compliance with Resolution E-4663:
- On 5/26/2016, PG&E filed Supplemental Advice 3499-G-B/4464-E-B for Implementation of Energy Efficiency (EE) Finance Program Pilots in Compliance with Resolution E-4663. This advice letter was approved effective 5/29/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3499-G-B.pdf

11) EE Financing Pilot Authorization To Release Customer Information:
- On 5/27/2015, PG&E filed Advice 3600-G/4645-E to establish New PG&E Gas and Electric Sample Form, Energy Efficiency Financing Pilot Programs Authorization Or Revocation Of Authorization To Release Customer Information and Revisions to Gas Schedules G-OBR and G-EFLIC and Electric Schedules E-OBR and E-EFLIC. This advice letter was approved effective 6/26/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3600-G.pdf

12) BayREN's Multifamily Program Funds:
- On 6/12/2015, PG&E filed Supplemental Advice 3595-G-A/4636-E-A Request Authority to Use PG&E's Energy Efficiency 2013-2015 Program Funds to Increase Funds Available to the San Francisco Bay Area Regional Energy Network's Multifamily Program. This advice letter was approved effective 7/12/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3595-G-A.pdf

13) PG&E's 2015 EE Portfolio:
- On 6/15/2015, PG&E filed Third Supplemental Advice 3541-G-C/4550-E-C to establish 2015 Energy Efficiency Portfolio Advice Letter In Compliance With Decision 14-10-046, Ordering Paragraph 16. This advice letter was approved effective 1/1/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3541-G-C.pdf

14) 2014 EE Incentive Award:
- On 6/30/2015, PG&E filed Advice 3606-G/4659-E Request of Pacific Gas and Electric Company for 2014 Energy Efficiency Incentive Award. Resolution G-3510 approved this advice letter effective 1/1/2016.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3606-G.pdf

15) Close Third Party Program:
- On 7/6/2015, PG&E filed Advice 3607-G/4664-E Request for Approval to Close Third Party Program. This advice letter was approved effective 8/5/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3607-G.pdf

16) Increase Funds Available to BayREN's Single Family Program:
- On 8/4/2015, PG&E filed Advice 3615-G/4682-E Request Authority to Use PG&E's Energy Efficiency 2013-2015 Program Funds to Increase Funds Available to the San Francisco Bay Area Regional Energy Network's Single Family Program. This advice letter was approved effective 8/17/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3615-G.pdf

17) Energy Efficiency Financing Pilot Information Technology Budget Advice Letter:
- On 8/12/2015, PG&E filed Advice 3620-G/4691-E PG&E's Energy Efficiency Financing Pilot Information Technology Budget Advice Letter In Compliance With Decision 13-09-044, Ordering Paragraph 17. This advice letter was approved effective 9/11/2015.

http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3620-G.pdf

18) Revisions to EE Financing Pilot Rate Schedules and Sample Forms:
- On 8/12/2015, PG&E filed Advice 3619-G/4690-E Request for Approval of Revisions to Energy Efficiency Financing Pilot Program Rate Schedules and Gas and Electric Sample Forms 79-1156 and 79-1157 in Compliance with Decision 13-09-044 and Decision 15-06-008. This advice letter has not yet been approved
http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3619-G.pdf

19) To-Code Pilot:
- On 8/14/2015, PG&E, on behalf of the IOUs, file Advice 3622-G/4693-E Pacific Gas and Electric Company, San Diego Gas and Electric Company, and Southern California Edison Company's To-Code Pilot Pursuant to Decision 14-10-046. This advice letter was approved effective 9/13/2015.
http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3622-G.pdf

20) Incentive Levels for Food Service Measures in the Statewide Commercial EE Program:
- On 8/20/2015, PG&E filed Advice 3623-G/4695-E Request of SCE, PG&E, SDG&E, and SoCalGas to Increase the Incentive Levels for Food Service Measures Offered in the Statewide Commercial Energy Efficiency Program. This advice letter was approved effective 9/19/2015.
http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3623-G.pdf

21) Shift Funds to PG&E's Residential Energy Efficiency Program:
- On 9/14/2015, PG&E filed Advice 3631-G/4703-E Request For Authority to Shift Funds to PG&E's Residential Energy Efficiency Program. This advice letter was approved effective 10/14/2015.
http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3631-G.pdf

22) Second Part of EE Incentive Award for PY 2013:
- On 9/15/2014, PG&E filed Advice 3632-G/4705-E Request of Pacific Gas and Electric Company for Second Part of Energy Efficiency Incentive Award for Program Year 2013. Resolution G-3510 approved this advice letter effective 1/1/2016.
http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3632-G.pdf

23) Increase Funds Available to the Marin Clean Energy's Multifamily Program:
- On 10/15/2015, PG&E filed Advice 3642-G/4720-E Request Authority to Use PG&E's Energy Efficiency 2013-2015 Program Funds to Increase Funds Available to the Marin Clean Energy's Multifamily Program. This advice letter was approved effective 11/14/2015.
http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3642-G.pdf

24) Close Third Party Programs:
- On 11/30/2015, PG&E filed Advice 3654-G/4746-E Request for Approval to Close Third Party Programs. This advice letter was superseded by AL 3654-G-A/4764-E-A, which was approved effective 12/31/2015.
http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3654-G.pdf

25) New Codes and Standards Energy Efficiency Subprogram:

- On 12/10/2015, PG&E filed Advice 3656-G/4752-E Pacific Gas and Electric Company's Request for Approval of a New Codes and Standards Energy Efficiency Subprogram. This advice letter was approved effective 1/1/2016.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3656-G.pdf

26) Close Third Party Programs:

- On 12/21/2015, PG&E filed Supplemental Advice 3654-G-A/4746-E-A Request for Approval to Close Third Party Programs. This advice letter was approved effective 12/31/2015.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3654-G-A.pdf

27) Removal of 2016 Flex Alert Budget:

- On 12/21/2015, PG&E filed Advice 3662-G/4762-E Removal of 2016 Flex Alert Budget. This advice letter was approved effective 1/1/2016.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3662-G.pdf

28) Retail Products Platform (RPP) Pilot:

- On 12/24/2015, PG&E filed Advice 3654-G/4746-E Request For Authority for Retail Products Platform (RPP) Pilot within PG&E's Residential Energy Efficiency Plug-Load and Appliances Sub-Program. This advice letter was approved effective 2/12/2016.
  http://www.pge.com/nots/rates/tariffs/tm2/pdf/GAS_3668-G.pdf