

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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

Rulemaking 13-11-005
(Filed November 14, 2013)

**SOUTHERN CALIFORNIA GAS COMPANY (U 904 G)
ENERGY EFFICIENCY PROGRAMS 2016 ANNUAL REPORT**

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May 24, 2017

ATTACHMENT

**SOUTHERN CALIFORNIA GAS
COMPANY**

**ENERGY EFFICIENCY PROGRAMS
ANNUAL REPORT**

2016 RESULTS



A  Sempra Energy utility

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2016 ENERGY EFFICIENCY PROGRAM PORTFOLIO SUMMARY

Executive Summary

At Southern California Gas Company (SoCalGas), sustainability and being a responsible environmental steward is a fundamental part of doing business. SoCalGas actively works to reduce the environmental impact of our operational practices, as well as help our customers reduce their impact by showing them how to use energy more efficiently. SoCalGas accomplishes this by offering a comprehensive suite of conservation and energy efficiency (EE) programs, strategies, and solutions to meet the dynamic energy needs of our customers. In 2016, SoCalGas leveraged the programmatic successes achieved in the 2013-2015 program cycle. SoCalGas further refined its program delivery and implementation in 2016 to actively seek EE opportunities and adapt to its diverse customer base. In 2016, SoCalGas demonstrated the success of its programs by saving customers more than 35.9 million therms, which represents nearly 124% of the energy efficiency goal established by the California Public Utilities Commission (Commission or CPUC). SoCalGas cost-effectively administered EE savings to customers, providing ratepayers over \$288 million in resource benefits. In addition, as part of SoCalGas' commitment to help California meet its goal of greenhouse gas emission mitigation, its EE programs avoided nearly 360,000 tons of carbon dioxide (CO₂).

SoCalGas continues to work closely with the Commission and other stakeholders to achieve California's strategic vision and goals to ensure: (1) maximum achievement of all cost-effective and feasible energy efficiency savings in the natural gas sector, (2) programs, strategies, and offerings that provide deep, long-term energy savings, and (3) energy efficiency programs that will generate quick and low-cost reductions in greenhouse gas emissions, as adopted in the California Long-Term Energy Efficiency Strategic Plan and Energy Action Plan (CLTEESP or Strategic Plan).

In order to achieve the Commission's aggressive long-term goals, SoCalGas has partnered with municipal electric utilities and water agencies to increase its program reach, enhance cost-effectiveness, and offer comprehensive demand-side management offerings to customers. This approach minimizes lost opportunities, allows for more comprehensive and deeper energy efficiency projects, and increases operational efficiencies allowing for a more streamlined delivery of ratepayer-funded programs.

Notable successes during program year 2016 include the following:

HOPPs Approved for Institutional Partners

Through the Institutional Partnerships team, SoCalGas filed a High Opportunity Projects and Programs (HOPPs) – Metered and Performance-Based Retrofits (MPBR) Program. SoCalGas' MPBR Program was a response to the Energy Division's request for "pay for performance" type of program in light of the passage of Assembly Bill (AB) 802 and Senate Bill (SB) 350. MPBR is intended to assist public sector customers in retrofitting existing facilities and incorporating innovative monitoring-based commissioning (MBCx). Three projects were identified through the Institutional Partnerships.

Instant Rebates Delivery of High-efficiency Appliances

In 2016, convection oven sales were almost 100% high-efficiency models, up from 50% prior to offering instant rebates. Participating foodservice vendors noted that since they joined the Instant Rebates Program, nine out of ten low-to-mid range fryer sales were high-efficiency. Prior to the program, participating vendors were primarily selling used equipment to their mostly small-business clientele base. Since participating in the program, they now offer high-efficiency equipment at a price that is competitive with standard models, granting customers access to high-efficiency equipment that would have otherwise been out of their price range.

Prominent Hotel Chain Invests in Energy-Efficient Water Heaters

Through the Point-of-Sale Commercial Water Heater Rebate Program, SoCalGas partnered with local distributors to sell high-efficiency storage and tankless water heaters to SoCalGas business customers in a streamlined process that is easier for all parties involved. Since 2015, SoCalGas' coordination with this hotel chain resulted in their purchase of over 70 water heaters through the Midstream Program, equating to nearly \$70,000 in incentives and approximately 132,627,000 therms saved over the life span of the equipment life.

Airline Food Service Demonstration Results – Energy Savings & Better Production

SoCalGas sponsored a project and worked with Fisher-Nickel, a division of Frontier Energy, and the California Energy Commission to demonstrate that significant savings can be achieved in a mission critical commercial/industrial kitchen preparing high volume, high quality airline meals. Approximately 9,200 therms per year savings were realized by upgrading five cooking appliances to the highest emerging technology energy efficiency standards.

Deep Retrofit for a Low-Income Housing, near-Zero Net Energy Demonstration

SoCalGas sponsored a project and worked with Electric Power Research Institute (EPRI) and the California Energy Commission to explore and test energy savings opportunities and obstacles in a typical Southern California low-income multifamily residential setting. In a common system that serves 28 units, solar evacuated tubes were added to assist and replace old boilers. With buried piping insulation improvements, preliminary results have shown significant savings, in excess of 65%, or 89 therms per year savings for each unit.

Leveraging SoCalGas' Advanced Meter Infrastructure to Address California's Water Concerns

In 2016, SoCalGas partnered with San Gabriel Valley Water Company and California American Water to launch two separate Water-Energy Nexus Advanced Meter Infrastructure (AMI) pilots to successfully achieve the following program goals: (1) network piggybacking, (2) combined utility data analytics for hot water leak detection, and (3) determining energy savings from reduced water loss.

Supporting Innovation in Third Party Program Offerings

SoCalGas is committed to building upon its success in implementing the Commission's vision of continuously adding third party-administered programs throughout the year in a fair and equitable manner. A new third party program selected via an Innovative Design for Energy Efficiency Activities (IDEEA365) solicitation finalized its program implementation plan and launched in 2016.

Leadership in the Development of New Finance Programs

The California Investor-Owned Utilities (IOUs) continued their efforts to develop a set of statewide financing pilot programs that offer scalable and leveraged financing products and test market incentives in the form of credit enhancements and on-bill repayment (OBR) for attracting private capital. The pilots consist of the following OBR 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; and the Residential Energy Finance Line Item Charge (EFLIC) Program. The EFLIC Program is only offered in PG&E's service territory. The pilots also consist of two off-bill programs: Single Family Loan Program (aka Residential Energy Efficiency Loan Assistance Program or REEL) and Off-Bill Small Business Lease Providers Program. During 2016, SoCalGas was actively involved and took a lead role in supporting California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) with launching the REEL program, successfully developed, engaged in the development of the commercial pilots, and assisted with securing additional administrative budget for CAEATFA through comments and support. Additionally, SoCalGas managed the California Hub for Energy Efficiency Financing (CHEEF) agreement including administration of quarterly invoicing and reporting activities and led efforts to amend the CHEEF agreement to meet program and administrative objectives.

Effective Collaborations of Programs

SoCalGas continued program collaboration efforts among different programs, as well as externally with municipalities and IOUs to ensure integration of natural gas/electric/water efficiency, solar, demand response, and advanced metering offerings. SoCalGas' single point-of-contact (SPOC) strategy for the multi-family sector delivered significant energy savings results. In 2016, SoCalGas enrolled over 6,000 multi-family units in the low-income Energy Savings Assistance (ESA) Program, Energy Efficiency Multifamily Rebate Program, and On-Demand

Efficiency Program. Leveraging the SPOC strategy also resulted in enrolling the single largest residential retrofit project in the SoCalGas' Multifamily Energy Upgrade California Program.

Project of the Year: Residential Multifamily Programs

Working together with a property owner and Los Angeles Department of Water and Power (LADWP), SoCalGas coordinated one of the largest residential energy efficiency retrofit projects in California. The property, one of the largest residential properties served by SoCalGas, houses over 11,000 residents and is comprised of high-rise towers and garden-style apartments as well as common-areas (i.e., garages, swimming pools, offices and maintenance yards). The project yielded the most energy savings (annual savings of 275,000 therms and 8,500 kWh) and financial incentives ever for a SoCalGas residential energy efficiency program. This project's success creates a road map for other property owners to follow, and illustrates what is possible when property owners, utilities and contractors collaborate closely to achieve the common goal of energy efficiency. As a result, the project was nominated for the LA Better Building Challenge residential project of the year.

2016 Program Roster

Continuing off the successes of 2015, these program highlights reflect a fraction of the accomplishments during program year 2016. Pursuant to Decision (D.) 14-10-046, SoCalGas was authorized \$83.6 million in funding for the SoCalGas portfolio of energy efficiency programs. The annual funding levels established in the 2013-2014 cycle were extended in 2016 by D.14-10-046 to allow the continuation of EE programs in California.

These programs include the following:

Statewide Energy Efficiency Programs

- California Statewide Program for Residential Energy Efficiency
- Commercial Energy Efficiency Program
- Industrial Energy Efficiency Program
- Agricultural Energy Efficiency Program
- Emerging Technologies Program
- Codes and Standards Program
- Workforce Education and Training
- Statewide Marketing Education and Outreach
- Statewide Integrated Demand-Side Management (IDSMS)
- Energy Efficiency Finance Programs

Government/Institutional Energy Efficiency Partnership Programs

- California Department of Corrections Partnership
- California Community College Partnership
- University of California/California State University/IOU Partnership
- State of California/IOU Partnership
- Los Angeles County Partnership
- Kern County Partnership

- Riverside County Partnership
- San Bernardino County Partnership
- Santa Barbara County Partnership
- South Bay Cities Partnership
- San Luis Obispo County Partnership
- San Joaquin Valley Partnership
- Orange County Partnership
- SEEC Partnership
- Community Energy Partnership
- Desert Cities Partnership
- Ventura County Partnership
- Local Government Energy Efficiency Pilots
- New Partnerships Programs
- Regional Resource Placeholder
- Gateway Cities Partnership
- San Gabriel Valley COG Partnership
- City of Santa Ana Partnership
- West Side Cities Partnership
- City of Simi Valley Partnership
- City of Redlands Partnership
- City of Beaumont Partnership
- Western Riverside Energy Partnership
- North Orange County Cities Partnership
- San Bernardino Regional Energy Partnership

Third Party Energy Efficiency Programs

- Small Industrial Facility Upgrades
- Program for Resource Efficiency in Private and Public Schools
- On Demand Efficiency
- HERS Rater Training Advancement
- Multifamily Home Tune-Up
- Community Language Efficiency Outreach
- Multifamily Direct Therm Savings
- LivingWise™
- Manufactured Mobile Home
- California Sustainability Alliance
- Portfolio of the Future
- PACE
- Innovative Designs for Energy Efficiency Activities
- Instant Rebates! Point of Sale Food Service Equipment Program
- Water Loss Control Program
- Commercial Sustainable Development Program

- On Demand Efficiency for Campus Housing
- Energy Advantage Program for Small Business
- Connect
- Historical Building Energy Efficiency
- Clear Ice
- On-Premise Ozone Laundry

SoCalGas describes the activities performed and the successes achieved during the 2016 program year in these programs in the section entitled *Program Description and Strategies* below.

Program Descriptions and Strategies

Statewide Program for Residential Energy Efficiency

The Statewide Residential Energy Efficiency sector program is designated as the California Statewide Program for Residential Energy Efficiency (CalSPREE). CalSPREE offers and promotes both specific and comprehensive energy solutions for residential customers. By encouraging adoption of economically viable energy efficiency technologies, practices, and services, CalSPREE employs strategies and tactics to overcome market barriers while delivering services that support the CPUC's Strategic Plan.

CalSPREE's focus is to:

- Facilitate, sustain, and transform the long-term delivery and adoption of energy efficient products and services for single and multi-family dwellings;
- Cultivate, promote and sustain lasting energy-efficient behaviors by residential customers through a collaborative statewide education and outreach mechanism; and
- Meet customers' energy efficiency adoption preferences through a range of offerings including single-measure incentives and more comprehensive approaches.

To date, the IOUs - consisting of SoCalGas, San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE), and Pacific Gas and Electric Company (PG&E) - have implemented a number of different residential EE subprograms that are in various stages of maturity and availability across the state. CalSPREE integrates all of these subprograms to coordinate efforts and increase comprehensiveness of EE measure delivery.

The CalSPREE includes seven statewide subprogram elements that together comprise the core product and service offerings. These subprograms are: Energy Advisor, Plug Load and Appliances, Plug Load and Appliances Point of Sale, Multifamily Energy Efficiency Rebates, Energy Upgrade California Home Upgrade Program, Residential Heating, Ventilation, and Air Conditioning, and California Advanced Homes Program.

SCG3701 Statewide CalSPREE - Energy Advisor

The SoCalGas Residential Energy Advisor subprogram is a continuation of the existing statewide Energy Advisor subprogram within the residential energy efficiency portfolio. Although the IOUs share similar program theories, goals and design elements, each IOU may be implementing a unique tool by a different vendor.

In 2016, the SoCalGas Residential Energy Advisor subprogram continued to help customers understand how and when they have been using energy. Customers have the knowledge and tools available to improve their energy efficiency, energy use management, and where appropriate, will be guided to advancing whole-house energy solutions. The subprogram utilizes behavioral outreach initiatives and interactive tools designed to engage and encourage customers to reduce their energy consumption through subprogram recommendations and, as warranted, IDSM opportunities.

In 2016, SoCalGas Residential Energy Advisor subprogram exceeded its program goal by successfully completing 10,000 completed surveys (either online or printed). Year-end 2016 results include over 6,000 online surveys and 7,800 printed surveys.

The SoCalGas Residential Energy Advisor subprogram continued to provide survey processing for the third party SCG3770 PACE Energy Savings Project Program, which provides in-language (Spanish, Chinese, Vietnamese, and Korean) outreach to hard-to-reach customers. Additionally, SoCalGas piloted a short, visually-focused print survey to test the response rate, effectiveness, and customer satisfaction of a more visual survey format versus the heavy text booklet survey. Approximately 10,000 pilot surveys were mailed out, with no incentive provided (e.g. EE Kit or other free item). A customer feedback card was included to evaluate customer opinions of the format. The mailing resulted in a 17.9% response rate, a 10.9% increase from the traditionally used booklet, text-only survey. Customer feedback was positive and overall satisfaction was extremely high, indicating that the surveys were easy to follow and that the visuals made answering questions quick. SoCalGas plans to test this survey again with a larger mailing in 2017, coupled with a promotion of an energy efficiency kit to drive a higher response rate.

SCG3702 Statewide CalSPREE - Plug Load and Appliances

The SoCalGas Residential Plug Load and Appliances (PLA) subprogram consists of the Home Energy Efficiency Rebate (HEER), Business Consumer Electronics (BCE) and Appliance Recycling (ARP). The SoCalGas Residential PLA subprogram develops and builds upon existing relationships with retailers and includes recycling strategies and whole house solutions, plug load efficiency, performance standards, and opportunities for integration with local government, water agencies, publically owned utilities (POUs), and the IDSM subprogram.

The SoCalGas Residential PLA subprogram achieved success in 2016 through improved and continued efforts with participating retail partners. This included the use of in-store signage, increased program visibility and weekly in-store events with third party retail contractors. In

2016, the SoCalGas Residential PLA subprogram also managed to increase visibility in hard-to-reach areas through in-store marketing communication and retail store site visits. The success of these efforts is attributed to multiple marketing and outreach campaigns which contributed to the SoCalGas Residential PLA subprogram meeting or exceeding its respective Program Implementation Plan (PIP) forecasts. The online application aided in application processing.

The SoCalGas Residential PLA subprogram introduced multiple measure rebates in 2016 including the smart thermostat rebate; natural gas dryer rebate; and the thermostatic tub spout rebate. However, the PLA subprogram experienced delays with in-store marketing and rebate application materials in the beginning of 2016. The PLA subprogram did not meet overall subprogram objectives for 2016.

SCG3703 Statewide CalSPREE - Plug Load and Appliances Point of Sale

The SoCalGas Residential PLA Point of Sale (POS) subprogram is a merger of the former HEER, BCE, and ARP. This SoCalGas Residential PLA POS subprogram develops and builds upon existing point of sale retailer relationships and includes Responsible Appliance Disposal (RAD) appliance recycling strategies. PLA POS offers instant rebates and incentives to customers when they purchase and install Energy Star[®] qualified appliances such as clothes washers. The subprogram has the added benefit of recycling inefficient refrigerators and freezers, as well.

In 2016, the statewide Residential PLA team each continued efforts to more effectively and actively recruit new and engage with existing retail partners in developing programs and enhance retail store presence. The goal is to increase retailer/customer participation and utility visibility at retail locations. Residential appliance rebate offerings have become the major contenders for future Residential PLA POS subprogram developments and additional programs are being evaluated. Promotions focused on using consistent POP marketing material statewide and weekend local store outreach, setting the foundation for new targeted promotions and more retailers to participate in the future.

The SoCalGas Residential PLA POS subprogram exceeded both annual and program cycle goal savings and objectives in 2016. Much of the continued success was due in part to the continuing Residential PLA POS subprogram with the participating “big box” retailer and continued in-store events throughout 2016 that helped aid in awareness of the rebate program.

SCG3704 Statewide CalSPREE - Multifamily EE Rebates

The SoCalGas Residential Multifamily Energy Efficiency Rebates (MFEER) subprogram offers rebates to multifamily building owners and managers for installation of qualified energy efficiency products in apartment dwelling units and in common areas of apartment complexes, condominiums and mobile home parks. Energy efficiency measures include insulation, water heating and space heating.

In 2016, SoCalGas Residential MFEER subprogram continued to use the Single Point of Contact (SPOC) to outreach and assist customers with measure information, completing forms and information regarding the various multifamily subprograms. The SPOC was augmented by the use of the whole building consultant. The consultant was tasked with using their resources to outreach and enroll customer in the SoCalGas Residential multifamily subprograms including MFEER. This resulted in property owners submitting multiple applications for multiple properties. In addition, SoCalGas continued to outreach to the multifamily sector via tradeshows, events, print ads and coordination with other SoCalGas Residential MF subprograms.

The SoCalGas Residential MFEER subprogram changes in 2016 included expansion of the SPOC with a whole building consultant to assist with coordination of other multifamily energy efficiency programs in an effort to increase program participation and benefits to customers. The consultant brings a wealth of multifamily experience in addition to customer contacts that can drive participation. A temporary incentive increase for central water heating systems was offered in an effort to increase participation as well. The SoCalGas Residential MFEER subprogram also added a central system tank-less measure and a condensing central system water heater to the mix of measures. The SoCalGas Residential MFEER subprogram met and exceeded its 2016 therm savings goal.

SCG3705 Statewide CalSPREE - Energy Upgrade California Home Upgrade

The SoCalGas Residential Energy Upgrade California® Home Upgrade Program (HUP) is designed to build customer and contractor awareness of the house-as-a-system approach to residential retrofits and the many benefits of improving the comfort, safety, and energy savings potential of single family detached homes. Contractors employ building science principles and use sophisticated diagnostic equipment to detect the cause of home performance related problems, and quickly and accurately address them. The SoCalGas Residential HUP promotes both a Basic and Advanced path to retrofitting, allowing the customer to choose from a variety of measures that best suit their home and personal needs.

By partnering with the three IOUs and two municipalities, SoCalGas Residential HUP exceeded their unit and therm goal by over 500% in 2016 with joint programs in the shared territory with PG&E, SCE, SDG&E, LADWP, and the City of Burbank. SoCalGas continued its efforts to streamline program reporting requirements, train realtors/appraisers in EE and recruit and train contractors. Building on 2016 improvements, the IOUs have continued to work closely with program participants to identify and resolve application and process challenges through desktop procedure review practices, improved inspection processes and additional training to contractors.

The SoCalGas Residential HUP subprogram barriers in 2016 included: the high cost of projects to customers; lack of budget to handle growth of the program; and continuous changes to the program to align with Regional Energy Network (REN) and other IOU programs in order to

eliminate confusion with customers and contractors within the surrounding territories. The subprogram exceeded its unit and therm savings goals for 2016.

Energy Upgrade California® Multifamily

Within SoCalGas Residential HUP includes the Energy Upgrade California® Multifamily (multifamily Whole Building), which is an evaluation subprogram for SCE and SoCalGas as an extension of the existing statewide subprogram. The primary purpose is to test performance based approaches in the multifamily housing retrofit market by assisting property owners and managers with making informed decisions regarding energy reductions and savings for their properties. The multifamily Whole Building subprogram promotes long-term energy benefits through comprehensive EE retrofit measures including building shell upgrades, high-efficiency HVAC units, central heating and cooling systems, central domestic hot water heating and other deep energy reduction opportunities. The subprogram utilizes professional energy consultants to perform energy audits using approved multifamily audit tools and procedures to evaluate potential EE measures based on a least cost, maximum benefit approach customized to each property's specific needs.

The SoCalGas Residential Multifamily Whole Building project completed all projects and reached its unit goal for 2016. The SPOC helped move properties along the participation process. Property owners have embraced the SPOC as well as the assistance provided by the Program consultants. By paying for the property audits the programs removed a rather large barrier to participation. Energy assessment provided an accurate rebate of the final rebate, thus allowing property owners to make informed decisions.

In 2016, the multifamily Whole Building subprogram barriers included, access to investment capital and insufficient return on investment; cost of eligible measures; delays due to processing as a result of program rules to programs rules (CAZ/CAS, Safety, etc.); and the oversight required, making the process cumbersome and labor-intensive.

Middle Income Direct Install

The SoCalGas Middle Income Direct Install (MIDI) is a direct install program for customers whose income falls between 201% and 300% of the federal poverty guidelines. MIDI works in collaboration with the income qualified Energy Savings Assistance Program (ESA) using the ESA contractors to initiate leads for MIDI, with a goal of 2,000 units per year. To close the financial gap, no-cost measures are installed, reducing the total amount of money a customer would need to invest in their property in order to participate in HUP or the multifamily HUP Pilot.

MIDI works as designed, and has been able to serve all eligible customers requesting service in SoCalGas territory. Using ESA contractors has allowed MIDI to work with all IOUs which in turns allows the MIDI to serve all eligible customers.

SCG3706 Statewide CalSPREE - Residential Upstream HVAC

The SoCalGas Residential Upstream Heating, Ventilation and Air Conditioning (HVAC) subprogram is modeled after the commercial upstream HVAC subprogram. Incentives are provided to upstream market actors for the sale of high-efficiency residential HVAC systems in the IOU service territory. By offering equipment incentives upstream, the subprogram maximizes the opportunities to influence the purchase decision and transformation of the furnace market through the supply chain.

SoCalGas, through its third party vendor, recruited three distributors to participate in the SoCalGas Residential Upstream HVAC subprogram. Customer data requirements from the manufacturers and distributors were an issue due to the difficulty involved with obtaining customer information from contractors. Nevertheless, the SoCalGas Residential Upstream HVAC subprogram continued to evolve and SoCalGas remained committed to looking for ways to engage and increase participation in the program. SoCalGas will be looking to add additional manufacturer and distributor participants in 2017.

The Residential Quality Installation (QI) subprogram provides incentives to SoCalGas customers for the installation of high efficiency gas furnaces when installed to Energy Star[®] HVAC Quality Installation specifications by a participating contractor. The Residential QI subprogram continued to grow with significant program participation in 2016 compared to 2015. A total of eight contractors signed up to participate in the program with additional contractors expected to participate in 2017. In addition, SoCalGas continues to work with SCE to determine energy savings and cost-effectiveness of measures by climate zone for the residential QI subprogram.

The high cost of equipment and Title 24 enforcement proved to be prohibitive program barriers as the added cost of quality installation and permitting requirements led customers to choose a less expensive installation over a quality installation. The Residential QI rebate amounts may not be high enough to offset the cost of the equipment. The Residential QI subprogram is constantly evolving and SoCalGas continues to look for ways to engage contractor participation in the subprogram.

SCG3707 Statewide CalSPREE - California Advanced Homes

The SoCalGas California Advanced Homes Program (CAHP) is a comprehensive residential new construction subprogram concept with a cross-cutting focus on sustainable design and construction, green building practices, energy efficiency, and emerging technologies. Through a combination of education, design assistance and financial support, the CAHP works with building and related industries to exceed compliance with the California Code of Regulations, Title 24, Part 6, Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Standards), to prepare builders for changes to the Standards and to create future pathways beyond compliance and traditional energy savings objectives. Participation is open to single-family as well as low-rise and high-rise multi-family residential new construction built in an IOU service territory.

For 2016, CAHP was another successful year due to the accumulation of sufficient energy savings and project and unit participation to surpass 2016 program goals. The residential new construction market has continued its success as seen from 2013, 2014, and 2015. The CAHP met its program objectives in 2016.

The major barrier for 2016 continued to be the increasing Title 24 standards as the State approaches Zero Net Energy (ZNE) goals. It is becoming progressively more difficult for builders to exceed code requirements by a sizable margin and the base case energy allowance for residential units is becoming so low that allowable claimed savings are quickly diminishing. Also, the measures necessary to reach qualification are currently more difficult to implement and involve whole building design changes. The statewide CAHP team is addressing these concerns through strategic statewide program efforts that will be geared towards working directly with the builders and design teams to help them reach these targets.

Statewide Commercial Energy Efficiency Program

The Statewide Commercial Energy Efficiency (CEE) Program offers California's commercial customers a statewide-consistent suite of products and services to overcome the market barriers to optimized energy management. The program targets integrated energy management solutions through strategic energy planning support; technical support services, such as facility audits, and calculation and design assistance; and financial support through rebates, incentives, and financing options. Targeted end users include all commercial sub-segments such as distribution warehouses, office buildings, hotels, motels, restaurants, schools, trade schools, municipalities, universities, colleges, hospitals, retail facilities, entertainment centers, and smaller customers that have similar buying characteristics.

The Statewide CEE Program consists of six core statewide subprogram elements, including: Commercial Energy Advisor, Commercial Calculated Incentives, Commercial Deemed Incentives, Continuous Energy Improvement, and Nonresidential HVAC. IOU offerings also include local program elements such as third party programs, Mid-Stream Water Heating Rebates, Commercial Direct Install, and local government partnerships that have close ties to Business Improvement Districts.

SCG3708 Statewide CEE - Energy Advisor

The SoCalGas Commercial Energy Advisor (CEA) subprogram utilizes outreach initiatives and data driven interactive tools designed to engage and motivate customers to reduce their energy consumption through personalized program recommendations.

The CEA subprogram met its yearly audit goals of reaching and providing feedback to 790 customers to achieve energy efficiency and take advantage of EE program offerings. SoCalGas will enhance its current CEA subprogram and energy efficiency product offerings in 2017. CEA will continue to deliver value audit reports to the customer, reporting will evolve to include all energy efficiency offerings, not limited to equipment-based.

Customers are reluctant to act and commit to energy efficiency if not persuaded by any other enforcement than simply being energy-efficient. Natural gas continues to be an inexpensive conduit of energy and ranks low in customers' equipment upgrade policies.

SCG3709 Statewide CEE – Continuous Energy Improvement

The SoCalGas Commercial Continuous Energy Improvement (CEI) is subprogram designed to make energy an organizational priority for customers by employing change management and process improvement strategies to energy management, resulting in energy efficiency projects and driving savings. CEI Energy Advisors provide strategic energy management coaching, consulting, and training. Program milestones for each engagement include forming an energy management team, creating a baseline model of energy intensity, conducting organizational and ASHRAE Level 1 and/or 2 assessments, creating a prioritized pipeline of measures, setting an energy reduction goal, developing a plan to reach the goal, and adopting strategic energy management principles as part of a standard operational practice.

A valuable component of CEI is the identification of EE measures resulting in a pipeline of bankable projects. In 2016, 525 projects were identified through ASHRAE Level 1 and 2 assessments and data analytics. These projects, with significant potential savings, were prioritized by program participants supported by their CEI Energy Advisors.

The CEI Energy Advisors surveyed assigned account executives and received positive feedback regarding the SoCalGas Commercial CEI subprogram. Account executives cited that the SoCalGas Commercial CEI subprogram strengthened the customer/utility relationship, increased customer/utility communication, and increased customer awareness of energy efficiency programs. One account executive mentioned that the customer is now partnering with the utility to discuss and consider energy efficiency when they were not engaged before.

The CEI Energy Advisors maintained minimal contact with the previous year's CEI participants; however, it was noted that the customers continued to strategically manage energy in 2016. Given access to their data, the CEI Energy Advisors were able to model energy savings by normalizing metered data against multiple variables including weather, occupancy, and calendar variability.

Several participants experienced turnover at the Energy Champion position in 2016. Energy Champions are instrumental in leading the operations of CEI, and they are often managing this effort in addition to their regular jobs. The loss of an Energy Champion can slow or halt the progress of CEI as it did with 2016 participants. It can take significant time to recover from the loss of an Energy Champion, especially when they occupied key positions in the company. This can be mitigated with succession planning activities such as assigning a co-champion at the beginning of the engagement.

In anticipation and preparation of the future roll-out of a resource-based Strategic Energy Management (SEM) program, reporting formats were streamlined and updated to more easily identify utility influence on customer decisions to implement projects.

The most notable change to the SoCalGas Commercial CEI subprogram in 2016 was the incorporation of data analytics into the assessment process. Data analytics capabilities were utilized to perform remote audits of a large multi-site participant. This approach allowed the CEI Energy Advisor to gather actionable information for a broad number of buildings. The effort generated energy baselines for each site, as well as 473 actionable measures made up of 163 capital recommendations and 310 operational/behavioral recommendations.

SCG3710 Statewide CEE - Calculated Incentives

The SoCalGas Commercial Calculated Incentives subprogram offers incentives for customized new construction, retrofit and retro-commissioning energy efficiency projects. It also provides comprehensive technical and design assistance. Incentives are paid on the energy savings above and beyond baseline energy performance, which include state-mandated codes, federal-mandated codes, industry accepted performance standards, or other baseline energy performance standards.

The SoCalGas Commercial Calculated Incentives subprogram includes the Savings by Design (SBD) offering, which serves the commercial new construction segment. SBD promotes integrated design by providing owner incentives, design team incentives, and design assistance to participants who design spaces that perform at least 10% better than Title 24. SBD is offered in collaboration with SCE and LADWP in the respective shared territories.

In 2016, through the continued utility partnerships, the SBD subprogram captured a variety of project types. In 2016, SoCalGas' SBD participation rates increased. SBD coordinated with a number of internal and external stakeholders to understand the program's successes and possible improvements for re-design. The statewide group collaborated closely to work through any challenging issues that builders, designers or customers faced.

The SoCalGas Commercial Calculated Incentives subprogram also offers the Retro-Commissioning (RCx) subprogram. The goal of the RCx subprogram is to assist customers in reducing their operating costs through cost-effective energy savings, focused on the identification and implementation of low-cost / no-cost operational improvements and on optimizing how existing equipment operates as an integrated system.

SoCalGas continued its collaboration with both SCE and the LADWP in implementing two RCx programs within the utilities' shared service territories. For these SoCalGas collaborations, both LADWP and SCE act as the "lead utility" in implementing these co-funded programs.

As with previous years, the RCx subprogram has experienced reduced uptake in RCx projects due to the implementation of an approach which requires the customer to contract with their own RCx provider for an audit instead of the audit being conducted by IOU-contracted RCx providers. The change in the subprogram business model was intended to encourage customers to move forward with implementing RCx projects, rather than just taking advantage of a "no cost" RCx audit of their facilities, which historically did not always lead to action on the part of customers. The new RCx subprogram approach was designed to increase the success rate in

moving projects from the audit phase to the measure-implementation phase. The new model's intent was to place more onus on the RCx Provider as a means of motivating them to take the next step with the customer in implementing measures, thereby increasing the conversion rate of RCx audits to the actual implementation of RCx energy saving measures; however, there continues to be a notable decline in RCx activity using this business model.

The CPUC Energy Division's *ex ante* parallel review process and program guidance changes continued to be a common issue with customers and trade professionals. The additional time and expense of complying with increasingly complex program requirements was a hurdle for customer participation. SoCalGas participated in the *ex ante* parallel review and incorporated lessons learned into program design during the year. SoCalGas continued use of a post installation review to "true-up" savings for custom projects and provided training and performed quality control procedures in order to screen out ineligible projects.

SoCalGas provided training and performed quality control procedures in order to screen out ineligible projects. Continuous review was performed to improve impact methods and models through review of evaluation results, consideration of industry best practices, and collaboration with the CPUC *ex ante* review process.

SCG3711 Statewide CEE - Deemed Incentives

The SoCalGas Commercial Deemed Incentives subprogram offers rebates to customers in an easy to use mechanism to offset the cost of off-the-shelf energy saving equipment to cost-effectively subsidize and encourage adoption of mass market efficiency measures through fixed incentive amounts per unit for measure.

The SoCalGas Commercial Deemed Incentives subprogram also offers distributor and manufacturer incentives that aim to eliminate incremental initial cost to the customer via a midstream approach. The subprogram's objective is to assist SoCalGas customers in saving money and energy. The SoCalGas Commercial Deemed Incentives subprogram at the same time educates and motivates SoCalGas customers' plumbers and contractors about the benefits of participating in energy efficiency rebate programs. The primary goal of the Commercial Midstream Water Heater Distributor Rebate program is to increase water heater purchases by having distributors stock and sell high efficiency water heaters; have equipment readily available for SoCalGas customers at a discounted price; and provide the distributor a rebate directly for their efforts.

In 2016, marketing outreach for both food service equipment vendors as well as non-food service equipment in conjunction with SoCalGas' TradePro directory continues to contribute to increased program participation.

Since transitioning to the Midstream methodology for the water heaters, significant success was gained:

- More than twice the amount of water heaters was rebated than what was expected to be allocated towards the 2016 goal.
- Partnering with the distributors reduced the upfront cost to the customer versus the customer filling out an application and waiting for a rebate payment in the mail.
- Encouraged distributors to sell higher efficiency water heaters to customers, year-end results indicated an increase in the amount of rebates for water heaters with a 90% or higher efficiency.
- Achieved stronger relationships between the customers, plumbers, contractors, SoCalGas representatives, and distributors, as well being consistent with outreach and marketing efforts among all parties involved.

New measures - laminar flow restrictors and ozone laundry systems - were added to the program in 2016 with good uptake.

The SoCalGas Commercial Deemed Incentives subprogram exceeded projected 2016 savings goal objectives due to the combination of the Midstream Water Heater Distributor Rebate Program and to the marketing efforts of the food service outreach as well as the activities of Trade Pro directory. The therm exchange mechanism partnership with SCE was also a valuable savings contributor.

SCG3712 Statewide CEE - Commercial HVAC

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

The Commercial Upstream HVAC Equipment Incentive offers incentives for Commercial Quality Installation (C-QI) and Commercial Quality Maintenance (C-QM) to distributors who sell qualifying high-efficiency commercial HVAC equipment to increase the stocking and promotion of such equipment.

C-QI addresses commercial installation practices to ensure that equipment is installed and commissioned per industry standards and also attempts to minimize losses and inefficiencies that can exist at key sub-system level points below the HVAC unit itself. The Commercial HVAC Quality Installation Contractor Education and Customer Awareness programs were based on Air Conditioning Contractors of America (ACCA) standards. ACCA staff and other industry stakeholders in the Western HVAC Performance Alliance (WHPA) collaborated to validate the market transformation groundwork being laid and ensure that quality installation standards could be verified in the field in a sustainable fashion for Commercial HVAC.

C-QM addresses commercial maintenance practices to ensure that equipment is serviced per industry standards and that the maintenance efforts support the long-term strategic goal of transforming the trade from commodity-based to quality-based. C-QM promotes increased quality levels in HVAC maintenance through the use of ACCA standards.

Throughout 2016, SoCalGas worked with the Statewide IOU HVAC program teams individually and through the WHPA on improving elements of the Commercial HVAC programs including the development of statewide C-QM work papers and coordinating efforts on Workforce, Education and Training (WE&T), and inspection requirements, further reducing the administrative burden.

Further enhancing stakeholder collaboration, SoCalGas participated in the WE&T HVAC Sector Strategy kick off where best practice regarding current program design and training strategies were shared across IOU's. These efforts also yielded a WHPA QM User Guide for ACCA and ASHRAE and further investigation of performance-based program design and development.

The collaboration of IOUs across multiple WHPA committees plotted a successful course to meet the HVAC Long Term Strategic Plan and market transformation goals in 2016. Although great progress has been made, there were still challenges encountered including the unapproved Database for Energy Efficient Resources (DEER) 2016 work paper updates that have the potential to lower total resource costs and decrease energy savings and addressing the development of new work papers to capture unitary equipment not included in DEER. Finally, there has been progress made ensuring that there is seamless alignment with AB 802.

In order to adapt to market forces and regulatory requirements, SoCalGas continued to evaluate and adjust elements of the program such as introducing tiers to further promote high efficiency units. In addition, SoCalGas worked with the IOU statewide team to review and align incentives for consistency and to achieve continuity across program offerings. A key deliverable identified was the need to develop a matrix to integrate program design, engineering, Evaluation Measurement and Verification (EM&V), and WE&T.

SCG3805 Statewide CEE - Direct Install Incentives

The SoCalGas Commercial Direct Install (CDI) subprogram delivers no-cost or low-cost energy efficiency equipment retrofits to small and medium-sized commercial businesses throughout SoCalGas' service territory. The retrofits are to be completed through installation contractors to reduce energy and water usage, and result in resource savings for public and private commercial customers. The subprogram targets these customers in a staged delivery approach that provides program services in specific geographic areas allowing for a more concentrated, directed, and comprehensive program.

SoCalGas was approved to launch the CDI subprogram in the second quarter of 2016. SoCalGas took a three-fold approach to implementing the program. SoCalGas partnered with SCE's CDI subprogram in joint service territories to leverage existing infrastructure and integrate natural gas energy efficiency measures to ensure comprehensive energy efficiency solutions for customers.

SoCalGas also partnered with LADWP's CDI subprogram in joint service territories to leverage existing infrastructures and incorporate natural gas energy efficiency measures to ensure comprehensive demand-side management solutions for customers.

Lastly, SoCalGas conducted a competitive solicitation for a CDI program that would target specific high-usage, underserved segments of the commercial market including businesses in low-income communities that may not have funds to pursue energy efficiency upgrades. This approach consists of having one contractor install measures in the targeted segments, such as, but not limited to the lodging and healthcare segments.

Statewide Industrial Energy Efficiency Program

The Statewide Industrial Energy Efficiency (IEE) Program provides services to improve the energy efficiency of industrial facilities in California. The primary services offered to industrial customers include:

- Energy audits covering EE and demand management opportunities;
- Technical assistance in measure specification, procurement, and project management;
- Post-installation inspection and analysis to verify performance;
- Continuous energy improvement consultation; and
- Financial incentives and project financing for installed measures.

Financial incentives are based on deemed energy savings by per unit of equipment and calculated energy savings by per unit of energy.

The Statewide IEE Program includes four statewide subprogram elements that together comprise the core product and service offerings. Each IOU offers local programs that complement and enhance the core offerings in their region. The local portfolio mix of SoCalGas is specifically designed to enhance energy efficiency and DSM opportunities for industrial customers, including financial solutions.

SCG3713 Statewide IEE - Energy Advisor

The SoCalGas Industrial Energy Advisor (IEA) subprogram utilizes outreach initiatives and data driven interactive tools designed to engage and motivate customers to reduce their energy consumption through personalized program recommendations.

The SoCalGas IEA subprogram met its yearly audit of reaching and providing feedback to 445 customers to achieve energy efficiency and take advantage of EE program offerings. SoCalGas will enhance its current subprogram and energy efficiency product offerings in 2017. IEA will continue to deliver valuable audit reports to customers, and reporting will evolve to include all energy efficiency offerings, not limited to equipment-based.

Customers are reluctant to act and commit to energy efficiency if not persuaded by any other enforcement than simply being energy efficient. Although air quality agencies provide a beneficial support to equipment upgrade, the proportionality between combustion efficiency and

energy efficiency can prevent choosing an energy efficient option. Natural gas continues to be an inexpensive conduit of energy and ranks low in customers' equipment upgrade policies.

SCG3714 Statewide IEE - CEI

The SoCalGas Industrial Continuous Energy Improvement (CEI) subprogram is a consultative service that is aimed at helping industrial customers engage in long-term, strategic energy planning. SoCalGas Industrial CEI helps customers better manage energy using a comprehensive approach that addresses both technical and behavioral and operational improvement opportunities and creates sustainable practices through a high-level commitment from executive-level management.

The SoCalGas Industrial CEI Energy Advisors provide strategic energy management coaching, consulting, and training. Services offered as part of the CEI subprogram involve organizational and technical assessments of customers' energy management practices, long-term strategic energy planning, action plan implementation, quantifying energy savings, and updating of plans to provide continuous improvement.

A valuable component of CEI is the identification of measures resulting in a pipeline of bankable projects. In 2016, 127 projects were identified through ASHRAE Level 1 and/or 2 assessments and prioritized by program participants supported by their Energy Advisors.

The Industrial CEI Energy Advisors surveyed assigned account executives and received positive feedback regarding the program. Account executives cited that the CEI subprogram strengthened the customer/utility relationship, increased customer/utility communication, increased customer awareness of energy efficiency programs, and increased their understanding of overall customer needs. One account executive cited that CEI provides support in documenting utility influence on the customer decision to move forward with energy efficiency projects.

During 2016, the SoCalGas Industrial CEI subprogram continued CEI engagements with ten customers who enrolled in the program in 2015 or earlier. These customers represented different industrial sectors. Extended "light touch" Measurement & Verification (M&V) CEI assistance was provided to these customers including continued tracking of energy use key performance indicators (KPIs), review and updating of strategic energy management plans, and helping customers follow through with EE project implementation. A total of 30 additional energy saving measures were identified and added to these extended "light-touch" customers' Project Trackers.

In 2016, utility account executives were instrumental in the recruitment of every industrial participant. This is the first time that the program was able to rely exclusively on this preferred recruiting channel. The vital nature of utility account executives in promoting CEI to their customers is evidence of a more mature market that is ready to embrace strategic energy management.

One participant that excelled in CEI was able to document and implement energy management standard procedures that will be in place beyond the CEI engagement. They now routinely find and repair steam and compressed air leaks, and they implement equipment start-up and shutdown procedures where they used to leave machinery turned on, even when the facility was not in production. These efforts resulted in significant energy savings with additional natural gas measures currently in the approval process.

Some participants had difficulty maintaining CEI momentum because of pending business changes. CEI activities are often deprioritized in the face of major business changes. In addition, the complexity and variability of industrial processes complicates establishing a consistent baseline period for use in quantifying improvements and energy savings. Frequent changes and variability in production activities can impact tracking of energy use and the ability to quantify energy savings. Customers typically have limited resources available to document changes in production operations that impact energy use.

There is a need for energy sub-metering and improved process monitoring automation to facilitate the collection of energy and production variables that will allow energy-related improvements to be quantified. In anticipation and preparation of the future roll-out of a resource-based Industrial Strategic Energy Management (SEM) program, reporting formats were streamlined and updated to more easily identify utility influence on customer decisions to implement projects.

Based on feedback of some previous years' program participants, a "light touch" measurement and verification consulting service was engaged. This assisted customers in maintaining their CEI activities and monitoring customers' persistence in applying CEI principles in their operations as well as extended post-engagement monitoring.

SCG3715 Statewide IEE - Calculated Incentives

The SoCalGas Industrial Calculated Incentives subprogram offers incentives for customized retrofit EE projects. The subprogram features incentives based on calculated energy savings for measures installed as recommended by comprehensive technical and design assistance for customized and integrated energy efficiency/demand response initiatives in new construction and retrofit projects. SoCalGas continues to use a post installation review to "true-up" savings for custom projects.

Heat recovery and boiler measure type projects continue to be large contributors of energy savings for the SoCalGas Industrial Calculated Incentives subprogram. On-going activities such as energy audits of facilities, walk through surveys, and technical assistance for this sector resulted in recommendations for EE projects with calculations/estimates of energy savings for exceeding Title 24 code or industry standard practice baselines.

The SoCalGas Industrial Calculated Incentive subprogram is as complex as the projects it attempts to influence, due to the unique nature of the projects and the particular needs of the segment it is attempting to serve. The increasing complexity of the subprogram was found to

adversely impact participation. For the overall Calculated Incentive subprogram, SoCalGas participated in the *ex ante* parallel review and incorporated lessons learned into program design.

SoCalGas provided training and performed quality control procedures in order to screen out ineligible projects. Continuous review was performed to improve impact methods and models through review of evaluation results, consideration of industry best practices, and collaboration with the Energy Division's *ex ante* review team.

SCG3716 Statewide IEE - Deemed Incentives

The SoCalGas Industrial Deemed Incentives subprogram provides services to improve the energy efficiency of industrial facilities in California, including offering financial incentives based on deemed energy savings. The energy savings are deemed for measures installed. The subprogram is part of a suite of programs within the Statewide Industrial Energy Efficiency Program. It also features rebates per unit measure for installed energy-saving projects and provides the IOU, equipment vendors, and customers an easy-to-use mechanism to cost-effectively subsidize and encourage adoption of mass market efficiency measures through fixed incentive amounts. The subprogram also offers rebates to customers in an easy-to-use manner to offset the cost of off-the-shelf energy saving equipment.

The SoCalGas Industrial Deemed Incentives subprogram directly addressed key market factors that led to higher energy costs for California businesses. By providing a menu of prescribed common measures, this simplified the process of reviewing project proposals and provided a per EE measure rebate that reduced the cost of retrofitting outdated and inefficient equipment. This element made it attractive for customers to spend money in the short run to achieve lower energy costs in the long run.

Pipe and tank insulation and steam process boiler measures were the focus for deemed energy savings in 2016 for the industrial sector, however, the subprogram fell slightly short of the projected 2016 savings goal.

Statewide Agricultural Energy Efficiency Program

The Statewide Agricultural Energy Efficiency (AEE) Program facilitates the delivery of integrated energy management solutions to California's agricultural customers. The program offers a suite of products and services, such as strategic energy planning support, technical support services, facility audits, pump tests, calculation/design assistance, financing options, and financial support through rebates and incentives. In addition, the program adopts and supports the strategies and actions of the Agricultural and Industrial chapters of the CLTEESP.

The Statewide AEE Program targets end-users such as irrigated agricultural growers (crops, fruits, vegetable, and nuts), greenhouses, post-harvest processors (ginners, nut hullers, and associated refrigerated warehouses), and dairies. Due to North American Industry Classification System (NAICS) designations, food processors have traditionally received IOU services through the Industrial program offering. However, there are those facilities with on-site processing that

are integrated with growers and their products, as is the case with some fruit and vegetable processors (canners, dryers, and freezers), prepared food manufacturers, wineries, and water distribution customers that may be addressed by this program's offerings. To address the potential in these markets, the Statewide Agricultural Energy Efficiency Program offers four subprograms.

SCG3717 Statewide AEE - Energy Advisor

The SoCalGas Agricultural Energy Advisor subprogram brings together services that support customer education and participation in energy efficiency, and energy reducing opportunities and benefits, along with awareness of greenhouse gas and water conservation activities.

The SoCalGas Agricultural Energy Advisor subprogram met its yearly audit goals of reaching and providing feedback to 445 customers to achieve energy efficiency and take advantage of EE program offerings. SoCalGas will enhance its current program and energy efficiency product offerings in 2017. The Agricultural Energy Advisor will continue to deliver value audit reports to the customer, reporting will evolve to include all energy efficiency offerings, not limited to equipment based.

Customers are reluctant to act and commit to energy efficiency if not persuaded by any other enforcement than simply being energy efficient. Although air quality agencies provide a beneficial support to equipment upgrade, the proportionality between combustion efficiency and energy efficiency prevent the choosing of an energy efficient option. The seasonal application of natural gas equipment for the agricultural sector provides a barrier on rate of return, and timing of upgrades while adhering to program and CPUC guidelines. Support and flexibility from governing bodies would help engage the agricultural sector by providing leniency on custom project implementation, and extending their respective industry standard practice implementation. Natural gas continues to be an inexpensive conduit of energy and ranks low in customer's equipment upgrade policies.

SCG3718 Statewide AEE - Continuous Energy Improvement

The SoCalGas Agricultural Continuous Energy Improvement (CEI) subprogram is a consultative service that is aimed at helping agricultural customers engage in long-term, strategic energy planning. SoCalGas Agricultural CEI subprogram helps customers better manage energy using a comprehensive approach that addresses both technical and management improvement opportunities and creates sustainable practices through a high-level commitment from executive-level management.

Due to the on-going California drought conditions in the first half of 2016, agricultural customers were less inclined to enroll in the program; however, some customers contacted at the annual agricultural show indicated that once their water resource issues were resolved, they would be interested in signing up for the SoCalGas Agricultural CEI subprogram in the future.

Since natural gas is primarily used for water pumping and is currently much less of a concern compared to water availability.

The 2016 SoCalGas Agricultural CEI subprogram did not deliver new engagements but a review of enrollment obstacles and additional research into alternative agricultural forums to reach and motivate customers were identified and will be used to inform future outreach. Based upon feedback from two agricultural facilities which were engaged in a prior year's pilot program to determine the issues, addressing the drought issue was a priority for the first half of 2016.

The SoCalGas Agricultural CEI evaluated better outreach methods for agricultural customers to sign up for future program enrollment opportunities. Since cooperatives bring together a number of farmers, they represent a significant opportunity for outreach and for sharing of best practices related to energy management.

SCG3719 Statewide AEE - Calculated Incentives

The SoCalGas Agricultural Calculated Incentive subprogram offers incentives for customized retrofit and retro-commissioning energy efficiency projects. The subprogram also provides comprehensive technical and design assistance.

The SoCalGas Agricultural Calculated Incentive subprogram is as complex as the projects it attempts to influence, due to the unique nature of the projects and the particular needs of the segment it is attempting to serve. The increasing complexity of the subprogram was found to adversely impact participation. For the overall Calculated Incentive subprogram, SoCalGas participated in the *ex ante* review process and incorporated lessons learned into program design. Dispositions limiting participation of large greenhouses and the natural gas engine pump measure used by farmers to pump water both adversely impacted program participation.

The SoCalGas Agricultural Calculated Incentives subprogram provided training and performed quality control procedures in order to screen out ineligible projects. Continuous review was performed to improve impact methods and models through review of evaluation results, consideration of industry best practices, and collaboration with the Energy Division's *ex ante* review team.

SCG3720 Statewide AEE - Deemed Incentives

The SoCalGas Agricultural Deemed Incentive subprogram offers rebates to customers in an easy-to-use mechanism to offset the cost of off-the-shelf energy saving equipment.

The subprogram kept focus on replacing existing energy efficient natural gas equipment, and encouraging customers to move up to higher-than-standard efficiency models when purchasing additional equipment. The deemed rebate offering provided utility representatives, equipment vendors, and customers an easy-to-use mechanism to cost-effectively subsidize and encourage adoption of mass market efficiency measures through fixed incentive amounts per unit or

measure. The subprogram also coordinated its activities with SoCalGas account executives and Commercial and Industrial service technicians to present energy efficiency program details to their customers.

The subprogram exceeded the projected 2016 savings goal objectives. The program attributes its success to the successful delivery of the greenhouse curtain measure which had the internal incentive caps removed to encourage greater participation.

Overall the deemed measure selection is small for this customer-base with much of the selection being based on electric water pumping. The most popular incentive measures in the program were the Greenhouse Heat Curtain and Greenhouse Infrared Film. SoCalGas continued to investigate possible deemed options for gas-powered engines.

Statewide Emerging Technologies Program

The Statewide Emerging Technologies Program (ETP) supports the California IOU Energy Efficiency (EE) programs and helps California meet its energy reduction goals by identifying and screening potential technologies, assessing them to validate performance and customer acceptance, performing in-situ demonstrations and publishing the results of these activities. Well performing technology is recommended for inclusion in investor owned utility (IOU) customer education and rebate programs for wide use by utility customers.

Emerging Technology (ET) activities are implemented through three subprograms:

- The Technology Development Support (TDS) subprogram, which seeks to increase technology supply by educating technology developers on technical and programmatic requirements of rebate measures
- The Technology Assessment Support (TAS) subprogram, which identifies and assesses the actual performance of emerging EE technologies with the goal of increasing the number of measures offered by EE programs.
- The Technology Introduction Support (TIS) subprogram, which helps introduce existing energy-saving technologies that are not already widely embraced by the consumers through demonstration showcases, scaled field demonstrations, and market and behavioral studies, which expose end-users to these technologies in real-world settings. ETP may also use third parties to deploy technologies on a limited scale in the market.

ETP uses a number of tactics to achieve the objectives of its three subprograms. Some of the key tactics are described below, but each tactic may be used to achieve any of the subprogram objectives, and this list is not comprehensive.

ETP efforts in 2016 resulted in the delivery of three potential measures for the EE Customer programs for development into deemed rebates/incentives. They are the advanced thermostat, Rheem H₂AC Rooftop unit that features heat recovery, and the dual setpoint boiler reset controller for combination services. ETP also successfully collaborated with the Portfolio of the Future (PoF) third party program, which resulted in additional progress overall on EE measurement development. ETP continues to work through the challenges of stringent codes &

standards development, technology availability and affordability to customers, as well as the change in paradigm from single technology assessments to integrated “holistic” systems.

Looking to the future, the SoCalGas ETP initiated significant work to manage, plan and implement all activities required to host the 2017 Emerging Technology Summit.

SCG3721 Statewide ET – Technology Development Support

The SoCalGas Technology Development Support (TDS) subprogram provides assistance to private industry in the development or improvement of technologies. Although product development is the domain of private industry, there are opportunities where IOUs can undertake targeted, cost-effective activities that provide value in support of private industry product development efforts. ETP support and guidance can reduce innovator uncertainties and allow them to move forward with promising products. ETP looks for and solicits opportunities to support EE product development, i.e. the process of taking an early-stage technology or concept and transforming it into a saleable product.

ETP uses several activities to support technology developers including:

- Participating in industry, academic and government agency organizations that are also focused on EE technology development and delivery and using leads gained there to work with the developers directly or leveraged with the organizations.
- Periodically participating in a Technology Resource Incubator Outreach (TRIO) symposium, which provides support and networking for EE and DR entrepreneurs, investors, and universities with the goal of providing participants the necessary perspective and tools to work with IOUs and ultimately introduce new EE measures to the marketplace.
- Participating in market and behavioral studies to investigate customer needs in targeted sectors and estimate customer reaction to new technologies and solutions. The key activities in which ETP engages is in product efficiency and functionality testing, as well as communication and collaboration with industries. These activities are often conducted on an ad hoc basis, as windows of opportunity arise.

SoCalGas ETP’s TDS strategies employed and activities conducted in 2016 include:

- Staying abreast of statewide ZNE and HVAC initiatives.
- Collaborating with the Emerging Technologies Coordinating Council (ETCC) on various program activities, including: a TRIO Symposium and Roundtable event hosted by SCE, a First Look West (FLoW) upstream incubator review and judging event and roundtable hosted at Caltech, a Rocket Fund upstream incubator Finalist Interviews hosted by SCE that included an ET Open Forum on early stage technologies, and a CEC EPIC/PIER-ETP Alignment meeting hosted at the UC Davis Data Center.
- Collaborating with industry directly and through industry and academic partners, such as, but not limited to, the Western Cooling Efficiency Center (WCEC), Center for Water-Energy Efficiency (CWEE), the Gas Technology Institute (GTI), Electric Power

Research Institute (EPRI), Energy Solutions Center (ESC), American Council for an Energy Efficient Economy, and Consortium for Energy Efficiency (CEE), in order to provide targeted support for technology development.

- Collaborating with and providing technical advice to innovators from universities and other research institutions such as the California Technical Institute (CalTech) and Department of Energy (DOE) FloW program and the associated Rocket Fund, whose goal is to provide funding and entrepreneurial education for academic innovators starting clean technology companies. This included designating one of the ETCC Open Forums to include these startup companies and establishing with other ETCC members a \$125,000 fund designed to help support these companies on their road to commercialization.
- Participating and engaging with industry stakeholders in CEC's Public Interest Energy Research (PIER) solicitations and projects. Collaborated with six external parties and SoCalGas EE program stakeholders in developing RFP responses, and completed five commitment letters to support various projects, including a demonstration of a low NO_x compact furnace for CA tight home construction and ZNE homes. Four projects were chosen by CEC for PIER support.
- Continuing an active partnership with LADWP in a strategic approach to integrate and leverage electric and gas utility efforts to achieve California's energy efficiency goals in the city of Los Angeles. LADWP and SoCalGas collaborated on the completion of the Playa Vista near-ZNE demonstration project, integrating combined heat and power, photovoltaic, and EE measures.
- Assisting a developer of a compact gas flowmeter with telemetry intended for cost-effective appliance gas use measurement for potential energy savings and control applications, including collaborating with SoCalGas in-house gas metering experts and the Cal Poly Pomona engineering faculty. This emerging product was included in two of the CEC proposals noted above, with one receiving CEC PIER funding.

SCG3722 Statewide ET – Technology Assessment Support

Through the Technology Assessment Support subprogram (TAS), ETP evaluates energy efficient measures that are new to the market (or underutilized for a given application) for performance claims and overall effectiveness in reducing energy consumption. A key objective of these assessments is the adoption of new measures into SoCalGas' EE portfolio, where assessment data is used to develop the required workpapers to introduce new EE measures. Historically, technology assessment is a core strength of ETP and has been critical to EE program success. ETP assessments may develop and utilize data/information from different sources including: in situ testing (customer or other field sites), laboratory testing, or paper studies used to support assessment findings.

In 2016, SoCalGas' ETP employed the following strategies and select activities for the TAS subprogram:

- Collaborating with IOU and non-IOU partners and scanning a wide variety of sources to identify suitable assessment candidates.

- Using the statewide database to report project activities on a quarterly basis, and employing a subset of the database to share with the CEE ETC consortium to exchange ideas and to leverage co-funding opportunities.
- Participating in and supporting four ET quarterly meetings held by the ETCC, focused on agricultural, commercial, residential, and data center topics, respectively.
- Participating in and supporting an ET Open Forum on market ready technologies hosted by PG&E.
- Participating in and supported two ET Advisory Council meetings hosted by SCE and SDG&E.
- Employing the E-Source data search capabilities to identify and evaluate new products and their potential for consideration for deemed measures, to avoid duplication of testing.
- SoCalGas ET researched and evaluated test reports on a tub-spout water stop technology that were produced by other utilities that were sufficient for SoCalGas' new measure team was able to use for workpaper development without the need for additional testing.
- Designing and overseeing laboratory and field demonstration technology assessments to gather new technology performance data.
- Producing reports describing TAS results, conclusions and recommendations, and communicating these to internal and external stakeholders for use in new EE measures.
- Transferring assessment results to, participating with and providing guidance and input to Customer Program's Innovation Now! stage-gate process for work paper development, including:
 - NEST thermostat, field tests
 - M2G boiler reset controller, scaled field testing
 - Rheem H2AC air to water heat recovery, field testing
 - Comparison of dual set point boiler controllers for combination service, field testing
 - Tub spout paper research
- Coordinating assessments and sharing technology information through the quarterly meetings of the ETCC, and participating in an ETCC Open Forum, where developers of new technologies have an opportunity to highlight their products to the ETP.
- Successfully identifying technologies and verified savings and benefits to IOU programs.
- Providing technical support and direction to Navigant Consulting Inc.'s Portfolio of the Future third-party program.
- Project managing and leveraging CEC PIER funding for an ongoing low-income housing EE retrofit study in cooperation with EPRI, LINC, and SCE, a project that was selected for later presentation in a CEC sponsored webinar on ZNE technologies and progress.
- Project managing an ongoing and CEC PIER-funded deep retrofit project for commercial kitchen water heating using multiple emerging technologies to assess integrated benefits including energy and operational savings, now led by Fisher-Nickel Inc. under Frontier Energy and GTI.
- Project-managing a CEC PIER funded project to showcase commercial kitchen cooking equipment to assess integrated benefits, including energy and operational savings, led by Fisher-Nickel Inc. under Frontier Energy and GTI.
- Starting a CEC PIER funded project to demonstrate an industrial low-temperature heat recovery system using an Organic Rankine Cycle (ORC), led by EPRI.

- Project managing a CEC funded project to understand and improve solar thermal water heating and cost effectiveness, led by the University of California at Davis.
- Continuing a water and energy nexus behavioral study with UC Davis' Center for Water-Energy Efficiency and the City of Burbank.

SCG3723 Statewide ET - Technology Introduction Support

Technology Introduction Support (TIS) subprogram supports the market introduction of new and existing, but underutilized, technologies to the market, on a limited scale, through several activities, including:

- Scaled Field Placements (SFP), which consist of placing a measure at a number of customer sites as a key step to gain market traction and feedback. Typically, these measures have already undergone an assessment or similar evaluation to reduce risk of failure. Monitoring activities on each scaled field placement are determined as appropriate.
- Demonstration and Showcase (DS) projects, designed to provide key stakeholders the opportunity to "kick the tires" on proven combinations of measures that advance CLTEESP and ZNE goals. DS projects introduce measures to stakeholders at a system level and in real-world settings. Potential customers gain knowledge about applications and installations, and the projects help create broader public and technical community exposure and increased market knowledge. Key attributes of DS projects are that they are open to stakeholders and highlight a systems approach rather than an individual technology approach.
- Market and behavioral studies are designed to perform targeted research on customer behavior, decision making, and market behavior to gain a qualitative and quantitative understanding of customer perceptions and acceptance of new measures and of market readiness and the potential for the new measures.
- Technology Resource Innovation Program (TRIP) solicits third-party projects (of up to \$300,000) to deploy emerging technologies on a limited scale to the market.

In 2016, SoCalGas' ETP employed the following strategies and select activities for the TIS subprogram:

- Conducting residential ZNE demonstrations in partnership with home builders supporting the advancement of state goals, including a commercial near-ZNE showcase integrating several energy savings and emerging technology applications at a LEED Platinum community center at Playa Vista. Developed an annual report white paper for presentation at a future industry conference; conducted two public outreach tours (e.g. Greenbuild LA) and presented initial results in a poster session at the 2016 American Council for an Energy-Efficient Economy (ACEEE) Summer Study conference.
- Performing primary and secondary research, as necessary, to gain market insight.
- Coordinating with the statewide ETCC stakeholders.
- Identifying and screening several technologies to support the AB793 initiative and used in the development of proposed action plans.

- Engaging with the ETCC by participating in quarterly meetings and presentations, advising on website management and other technology implementation support activities.
- Soliciting third party programs through the TRIP solicitation to introduce emerging technologies in limited amounts into the market – SoCalGas scanned the opportunities, did not find a good fit to hold its own solicitation in 2016, but participated in a statewide solicitation seminar hosted by SCE.

SCG3806 Statewide ET - Water Energy Nexus Shared Network Advanced Meter Infrastructure Pilots

The SoCalGas Water Energy Nexus Shared Network Advanced Metering Infrastructure (WEN AMI) Pilots³ have been established to develop and refine the identification of potential hot water leaks based on analytics of both gas and combined water and gas usage data, and to evaluate the potential benefits associated with hot water leak detection and resolution. The WEN Pilots allow for water utilities to leverage the existing SoCalGas Advanced Meter Infrastructure (AMI) network to collect and transmit hourly water usage data, which is used in the analytics effort. Two separate Commission-regulated water utilities, San Gabriel Valley Water Company and California American Water, are participating in this pilot program, and a 3rd party analytics vendor, Valor Water Analytics, is conducting the combined water-gas analytics.

In 2016, the deployment of advanced meter radio modules (Meter Transmission Units or ‘MTUs’) by the participating water utilities was completed, with approximately 1,800 water MTUs successfully transmitting data over the SoCalGas Advanced Meter Network. The analytics period kicked off in the fourth quarter of 2016 for the San Gabriel Valley Water Company WEN AMI Pilot, and the analytics period for the California American Water WEN AMI Pilot will begin in 2017.

The WEN Shared AMI Pilots have been driving to achieve the following program goals: (1) network piggybacking, (2) Combined utility data analytics for hot water leak detection, and (3) Determining energy savings from reduced water loss. The first goal has been met, as both WEN Shared AMI Pilots participants have deployed their pilot water MTUs and are successfully transmitting data over the SoCalGas AMI Network. The WEN Shared AMI Pilots have begun work on Goals 2 and 3 and will continue to these efforts in 2017.

Statewide Codes & Standards Program

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 United States Department of Energy (DOE), to strengthen EE regulations. The C&S Program also supports compliance improvement with existing regulations to maximize gross savings, assists local governments to develop ordinances that exceed statewide minimum requirements, and coordinates with other programs and entities to support the State’s ambitious

³ D.15-09-023, Advice No. 5014, Advice No.4992-A

energy policy goals. C&S Program advocacy and compliance improvement activities extend to virtually all buildings and potentially all appliances sold in California.

Throughout 2016, SoCalGas collaborated with the CEC to initiate over 20 new Codes and Standards Enhancement (CASE) proposals for the 2019 Title 24, Part 6 rulemaking, assisting with related infrastructure and resource development for 2019, and supported preparations for 2016 Standards implementation. SoCalGas also participated in the ASHRAE 90.1 and 189.1 Standards technical committees and working groups.

SoCalGas supported new appliance efficiency standards at both the state and federal levels where four appliance CASE proposals were adopted by the Energy Commission in 2016: LEDs, small diameter directional lamps, computers, and displays. Three new CASE proposals are under development for irrigation emitters, EISA exempt lamps and Standby power. SoCalGas supported 18 federal standards that were adopted in 2016 and four that are scheduled for adoption in 2017 including the collection and submittal of lab test data, market and pricing data, submitting comments, and participating in meetings and working groups.

The Compliance Improvement subprogram delivered 244 Title 24, Part 6 standards-related traditional classroom training sessions, twenty virtual classes, facilitated twenty “Decoding Talks”, and updated all on-line self-study courses to reflect the changes and additions to the standards. The Energy Code Ace tools and resources were updated for the 2016 Standards in addition to launching a new Application Guide series. In close collaboration with the Energy Commission, the statewide C&S Compliance Improvement team developed dynamic compliance resources and checklists, and supported the development of dynamic forms that are expected to be released in 2017. The statewide C&S Compliance Improvement team also developed and updated twelve On-Demand Videos in support of the Energy Commission’s Modernized Appliance Efficiency Database System (MAEDBS), seven fact sheets, and a Water-Energy Nexus online self-study course.

The C&S Program team continued to support expansion of the Reach Code subprogram which was in a growth cycle driven by the new 2016 Title 24 standards and increased focus by local governments on climate action plans. The statewide C&S team is coordinating with the CEC to provide the technical analysis needed to support local jurisdictions adopting local energy ordinances.

Increasing scrutiny by stakeholders to CEC and DOE rulemakings continues to compel increasing rigor to achieve success. Greater rigor was achieved by increasing research (lab testing, field surveys, etc.) which increased costs. The complexity of building codes and the number of appliance standards continued to increase. DOE standards for new product categories continued 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 audience requiring Title 24, Part 6 training has increased in scope and now includes architects and designers, commissioning agents and acceptance test technicians, distribution inspectors. Increased training modules are required to serve this expanded user group.

There are several opportunities to increase savings from state and federal building codes and appliance standards. There is a need to continue expansion of primary research to ground proposals in data. Looking ahead, code simplification and efficiency improvement of existing buildings will be increasingly important. New reach codes can be developed based on 2016 building codes now that software has stabilized. Collaboration with the statewide C&S Compliance Improvement team to recruit and involve a diverse cross-section of market actors to contribute during the initial advocacy stage of the Building Energy Efficiency Standards rulemaking process can result in improved compliance rates and smoother implementation.

SCG3724 Statewide C&S - Building Codes & Compliance Advocacy

The Building Codes Advocacy subprogram primarily targets improvements to California's Building Energy Efficiency Standards, Title 24, Part 6 while also pursuing changes to national building codes which is updated by the CEC on a triannual cycle. 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 statewide goals outlined in the Clean Energy & Pollution Reduction Act (SB 350).

The subprogram leads worked closely with the CEC and provided support for implementation of 2016 Title 24 Building Standards in the following areas:

- Improved Energy Code Impact analysis (doubled calculated nonresidential savings)
- Supported the creation of the JA8 and JA10 categories in the CEC Appliance Database (MAEDBS).
- Provided a domestic hot water (DHW) model, including an improved heat pump water heater model and initial testing of drain water heat recovery units.
- Water efficiency and Model Water Efficiency Landscape Ordinance (MWELO) proposed requirements
- Provided support in pursuit of ZNE goals, including a CALGreen ZNE tier and prerequisite requirements, plug load model, and other analyses.

The statewide C&S team held stakeholder meetings in the second half of 2016 to inform and engage stakeholders, gather input and refine the measure list. The meetings covered approximately 24 code change proposals in ten categories: (1) Advanced Daylighting Design, (2) Demand Response, (3) Laboratory Measures, (4) Nonresidential HVAC, (5) Nonresidential Lighting, (6) Residential Envelope, (7) Residential HVAC, (8) Nonresidential Indoor Air Quality, (9) Residential Water Heating, and (10) Warehouse Topics.

In addition to CASE development, the statewide C&S team provided technical support to the Energy Commission through the development of an energy calculation spreadsheet for screening energy savings estimates, Time Dependent Valuation (TDV) demand factors spreadsheet for calculating generation peak demand, and peak demand and PV cost savings. The statewide C&S

team has also provided guidance and support on cost-effectiveness study of different definitions of ZNE (regulated loads, regulated + white goods, total, etc.) and drawing participants together from IAQ standard development for LEED, ASHRAE 62.1 and the Building Energy Efficiency Standards to allow use of Title 24, Part 6 IAQ standards for compliance with other standards.

SCG3725 Statewide C&S - Appliance Standards Advocacy Narrative

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[®], ASHRAE, and the Federal Trade Commission (FTC). 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. During 2016, the C&S program advocated for changes to Title 20

Appliance Efficiency Regulations. Activities included:

- Participated in several CEC webinars and workshops regarding LEDs, small-diameter directional lamps, computes, displays, portable spas and pool pumps rulemakings.
- Developed CASE studies for the CEC on products including consumer electronics, Energy Independence and Security Act (EISA) exempt lamps, sprinkler spray bodies, commercial clothes dryers, televisions computers and displays.
- Completed laboratory testing for commercial clothes dryers with results submitted as part of the CASE studies.

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

- Researched and responded to specific federal rulemaking and specification processes issues conducted by the DOE, EPA ENERGY STAR[®], and the Federal Trade Commission.
- Participated in several stakeholder meetings during rulemakings and specifications process, resulting in thirty rulemaking advocacy letters issued in 2016. The results of these efforts will be determined in future years⁴.
- IOU Advocacy letters issued in previous years influenced rulings on several Federal Measures taking effect in 2016.
- Participated in DOE's Appliance Standards and Rulemaking Federal Advisory Committee working groups with DOE, industry, and other stakeholders.

⁴ Battery chargers, boilers, dehumidifiers, miscellaneous refrigeration products, pre-rinse spray valves, vending machines and ceiling fan light kits.

SCG3726 Statewide C&S - Compliance Enhancement

Following adoption, C&S supports compliance improvement with both the Building Energy Efficiency Standards and the Appliance Standards. Compliance improvement activities complement 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 codes and standards is a crucial requirement for capturing the intended energy savings for the long-term benefit of society.

Title 24, Part 6 Building Energy Standards Compliance Improvement Efforts:

- The Compliance Improvement team updated existing training assets and created new 2016 Title 24, Part 6 training courses designed to support market actors across the compliance industry. Training is offered in several modalities including traditional classroom sessions, virtual classroom sessions, webinars and online self-study, allowing users to take the course at their convenience.
- The Title 24 Compliance Improvement team conducted over 240 classroom (in-person) training sessions with approximately 4,800 attendees.
- The Title 24 Compliance Improvement team conducted decoding webinars covering five topics related to the 2016 Standards update. Each webinar was offered in four separate sessions, resulting in completion of 20 decoding webinars with a total of 659 attendees.
- The Title 24 Compliance Improvement team updated five virtual classroom (v-class) courses to reflect changes in the 2016 Standards. Virtual classes are modified versions of the traditional Standards Essentials suite of classroom courses targeting energy consultants. The Title 24 Compliance Improvement team conducted 20 v-classes with a total of over 440 attendees.
- The Title 24 Compliance Improvement team updated the existing Energy Code Ace fact and triggers sheets for the 2016 Standards, and developed seven new Application Guides.
- The team continued outreach via Energy Code Ace by participating in industry events, distributing 70 targeted messages, and updating EnergyCodeAce.com.
- The Energy Code Ace team updated all four of the “Ace” tools for the 2016 Standards.
- The Title 24 Compliance Improvement team is coordinating with the Building Advocacy program to strengthen the process by which market actors contribute input to the codes and standards improvement process and minimize compliance issues created by the Standards language itself.
- The Compliance Improvement team is updating CEA residential and nonresidential examinations for 2016 Standards.
- SoCalGas worked with Southern California Edison to implement the Master Builder Program which assisted builders implement new high performance walls and high performance attic insulation techniques.

Title 20 Appliance Standards Compliance Improvement:

The Compliance Improvement team completed the following activities in 2016, which was the first full year of the Title 20 compliance support activities:

- Coordinated with the Energy Commission to refine and finalize a 2016 outreach plan.
- Launched twelve Energy Code Ace on-demand video modules organized under the six topics to support Title 20 compliance improvement.
- Developed a 60-minute online self-study course on the Water-Energy Nexus, available through the Energy Code Ace website.
- The Compliance Improvement team developed the following Title 20-related resources:
 - Fact sheets documenting requirements for the equipment and Title 20 certification processes:
 - Added Title 20 Appliance Standards document to 2016 Reference Ace tool to allow users to easily reference performance requirements to ensure specified equipment is compliant with the Standards.
- In collaboration with CEC, initiated monthly analysis of Title 20 hotline calls to determine or check to see if resources are addressing market needs
- Added the following Title 20 web resources:
 - Title 20 On-Demand Videos page views comprised approximately 0.1% (272) of all page views (268,379). For context, the Energy Code Ace homepage comprised 34% of the 268,379 page views in 2016.
 - Title 20 documents (e.g., fact sheets, FAQ, handouts) comprised approximately 4% (3,992) of the total file views (100,762). For context, the fact sheet “What’s New: 2016 Residential Code” was downloaded most often (8,392) in 2016.

SCG3727 Statewide C&S - Reach Codes

In addition to state and national building codes, 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. The Reach Codes subprogram support local governments through 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.

In 2016, the subprogram 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. The subprogram created several technical resources for local jurisdiction use that include the Nonresidential Outdoor Lighting Cost-Effectiveness Study, the Cool Roof Cost-Effectiveness Study, Plug-In Electric Vehicles Infrastructure, and the 2016 CALGreen Cost-Effectiveness Study for Low-Rise Residential New Construction.

The subprogram was also able support to the city of Santa Monica to develop the first Low-Rise Residential ZNE reach code as defined by the Integrated Energy Policy Report (IEPR). Single Family New Construction will be designed to 15% above 2016 Title 24 Pt 6 with High Rise Multifamily and Non-Residential new construction will be designed to 10% above 2016 Title 24 Pt 6. Work is expected to continue in 2017 to encourage compliance.

The subprogram worked with CEC staff on proposed solar ordinance features recommending a “reach” level of energy efficiency beyond the minimum code to ensure loading order maintained and encourage achieving all feasible savings, developed the cost-effectiveness study and methodology for determining minimum PV system size (without oversizing) providing recommendations on ordinance language, and investigating options to implement software revisions to facilitate implementation. Additional work was completed that analyzed the feasibility of requiring residential new construction to meet the Title 24, Part 11 definition of ZNE achieving an Energy Design Rating (EDR) of zero. Analysis is underway to expand the study to all climate zones in 2017.

SCG3728 Statewide C&S - Planning Coordination

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.

In 2016, the Planning and Coordination subprogram 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. The statewide C&S team also developed a standing statewide cross-functional conference call to improve coordination communication with other groups within the IOU EE portfolio. In addition, the subprogram staff continued collaboration with the WE&T statewide team on training calendar offerings for building industry community and training for community colleges on Title 24 code requirements.

Statewide Workforce Education & Training Program

The Statewide IOU Workforce Education and Training (WE&T) Program represents a portfolio of education, training, and workforce development planning and implementation funded by or coordinated with the Investor-Owned Utilities (IOUs): PG&E, SCE, SDG&E, and SoCalGas. Education and training are vital components of each of the IOU's energy efficiency portfolio.

SoCalGas Workforce Education & Training continued reaching out for new curriculum across the energy efficiency industry to offer energy efficiency workforce in support of resource program goals and objectives. Achieving deeper savings, articulating code changes, and developing a well-trained and appropriately-skilled workforce represented some of the driving themes for WE&T in 2016. There were also challenges in the last year, such as: keeping pace with local, regional, and state policies and initiatives; trying to coordinate and align WE&T efforts with numerous energy efficiency training implementers; and maintaining commitments to the Strategic Plan, workforce needs, education curriculum, and training standards.

SCG3729 Statewide WE&T Centergies

The WE&T Centergies Sub-Program is generally organized around market sectors and cross-cutting segments to facilitate workforce education and training appropriate for achieving the energy savings, demand reductions and related energy initiatives required of the IOUs.

During 2016, SoCalGas WE&T Centergies conducted 167 training/seminar sessions, 104 outreach consultations, and 229 equipment demonstrations. SoCalGas achieved these goals while taking steps to adjust its portfolio offerings to include Integrated Demand-side Management curriculum, identifying partners to expand demonstration lab work, and using more hands-on field tools.

The trainings and seminars provided are a mix of existing and new courses developed in collaboration with WE&T partners to meet student needs. Examples of continuing efforts include: Building Operator Certification training sessions and webinar series to commercial building operators; building awareness and education in Building Science in 2016 by offering three classes in this area; hosting the Municipal Green Building Conference and Expo to further awareness and demonstrations in areas of sustainability; and partnering with the Metropolitan Water District to facilitate four California-friendly landscape classes held to promote sustainability and drought awareness; and collaborating with the Home Building Institute (HBI) to provide work-based learning, education, and training in landscape and facilities maintenance to qualified trainees at the Energy Resource Center.

New activities and efforts were complementary to the continuing WE&T work implemented during 2016. For example, the statewide WE&T team's focus on relationship building with labor and apprenticeships - as part of a more collaborative training strategy - began taking shape in 2015 and continued in 2016. In addition, SoCalGas expanded its partnership with the Institute of Heating and Air Conditioning Industries, Inc. (IHACI) to design and add the new industry-requested HVAC/R classes to its HVAC training series. SoCalGas also engaged the plumbing

and mechanical trades in the area of water energy nexus and sustainability with a presentation focused on residential and commercial water-heating held in the newly designed water heating demonstration lab. And finally, SoCalGas' WE&T team is collaborating with a water-heating distributor in offering quarterly, in-depth energy efficiency training sessions for premium tankless water-heating systems. The training sessions were developed to help achieve deeper energy savings and increase uptake for efficient tankless water-heating equipment and technology. The training includes interactive product demonstrations, as well as hands-on installation, operation, diagnostics and trouble shooting.

In support of the Business Plan development process, SoCalGas worked with the other IOUs to streamline the questions used in the post-seminar evaluations for the purpose of consistency in future data collection efforts.

SCG3730 Statewide WE&T Connections

The WE&T Connections Sub-Program is organized around downstream and upstream relationships between the IOUs and the educational sector that support workforce development in energy efficiency (EE), energy management, and educating students about green careers. The Connections Sub-Program seeks to promote understanding of EE, demand side management (DSM), distributed generation (DG), and green career awareness along all educational paths. WE&T Connections achieves its EE educational goals by working with community-based organizations, state education agencies, and educational stakeholders. In conjunction with third party vendors, Connections provides interactive programs, educational materials, assemblies, and teacher workshops correlated, as appropriate, to the California Department of Education's content standards.

In 2016, the Statewide WE&T Connections program solicited and selected new program implementers. The programs selected were separately targeted at the K-8, 9-12 and post-secondary education level.

In 2016, the WE&T Connections Program achievements were mixed. The PEAK program, which targets grades K-8, exceeded its goal of reaching 6,000 students within the SoCalGas service area. In addition, 83% of the schools participating in the program were categorized as Title 1 schools. The Energize Schools Program, which targets grades 9-12, was also able to exceed its goal of statewide students reached within the SoCalGas service area. Of the schools participating in the program, 73% were categorized as Title 1 schools. And finally, the Post-Secondary school program, with its Education and Internship components, lagged on its goals for number of faculty partners engaged, number of filled internship positions, community project roles accomplished, and campuses reached by the program. It did, however, meet its goal for the number of Career Pathways modules developed.

SCG3731 Statewide WE&T- Strategic Planning

The WE&T Planning Sub-Program involves the management and execution of several strategic statewide planning tasks and resulting project implementation actions initiated by the Strategic Plan.

During 2016, the SoCalGas WE&T Strategic Planning team spent considerable time focused on strategic planning for the Workforce Education & Training program in support of the SoCalGas Energy Efficiency Business Plan. The time and effort resulted in research that identified critical market, workforce, and energy sector information that has helped shape key objectives and goals for WE&T in the forthcoming rolling portfolio administration. The WE&T team transitioned from its stakeholder engagement forum format, which were used as taskforce meetings, into using the California Energy Efficiency Coordinating Committee (CAEECC) and the sub-committee meeting structure for continuing engagement with WE&T stakeholders. Thus, efforts to achieve greater value and outcomes from strategic collaboration with potential groups such as industry associations and trades, education institutions, policy makers, and government agencies in delivering well-trained and appropriately skilled workforce remain of the highest priority.

SCG3733 Statewide Marketing, Education and Outreach

In Decision 13-12-038, the Commission established the Statewide Marketing, Education and Outreach (ME&O) Program. The Commission directed that the Center for Sustainable Energy (CSE), formerly the California Center of Sustainable Energy (CCSE), would serve as the program administrator and be independently responsible to deliver results of the program. The Commission also adopted “a governance structure that leaves the details of running the statewide marketing campaign to the CSE, but also provides for strong oversight by the Commission and the California Energy Commission (CEC), while also allowing the utilities and others to provide input, advice, and collaboration.”

The Commission identified the IOUs’ responsibilities including: providing information to CSE in a timely manner; participating in the EM&V roadmap for marketing; coordinating with CSE on local and statewide marketing activities; and raising any issues with the semi-annual marketing plans proposed by CSE. The Commission also directed PG&E to serve as the fiscal manager, on behalf of the IOUs, through a contract with CSE without exercising control of, or modifications to, the overall design of the Statewide ME&O program.

In 2016, SoCalGas coordinated with CSE to ensure consistency between the statewide marketing program and the local marketing efforts conducted by SoCalGas. SoCalGas also provided collaborative feedback on campaign strategy, prioritization of marketing topics, and collateral.

SCG3734 Statewide IDSM Program

The California Long Term Energy Efficiency Strategic Plan (Strategic Plan) recognizes the integration of demand-side management options, including EE, demand response (DR), 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.

A 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 greenhouse gas (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., evaluation, measurement & verification, 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.

Statewide IDSM:

The following is the current status by the four IOUs of the eight IDSM program directives:

- 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 2016, including an executive summary section, to provide Energy Division staff with updates on the eight IDSM directives. All quarterly reports were uploaded and available for viewing on California Energy Efficiency Statistics Data Portal (EE Stats).
- The statewide IDSM Task Force held regular coordination phone calls to continue to ensure alignment across the state and discuss lessons learned.

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

SoCalGas IDSM:

Through a Single-Point-of-Contact (SPOC) strategy, SoCalGas' engaged many large multifamily portfolio owners successfully enrolling more than 6,900 units in the low-income Energy Savings Assistance Program, as well as other energy efficiency programs such as Multifamily Rebate and On-Demand Efficiency Programs. Through the SPOC, SoCalGas also worked with the largest multifamily complex in Southern California (more than 4,000 units) that resulted in the single largest residential retrofit project enrolled in the Multifamily Energy Upgrade California Program. The facility retrofitted its campus with new heating boiler plants and made comprehensive changes to the heating system. The facility is also currently replacing its lighting systems through LADWP's lighting programs.

SoCalGas continued to partner with other utilities to deliver IDSM solutions that encompass multiple fuel sources, (gas, electricity and water) and continued to expand its capabilities in delivering comprehensive customer solutions via its partnership programs. SoCalGas launched two new partnership programs with LADWP, and another two new programs with Metropolitan Water District (MWD). By establishing the Engineering Support for Calculated Program Partnership with LADWP, SoCalGas and LADWP have implemented a collaborative process where both utilities jointly review custom energy efficiency projects with both gas and electric opportunities. To date, the IDSM initiative has delivered 27 joint program agreements with municipal utilities that include LADWP, Riverside Public Utilities, Anaheim Public Utilities, Pasadena Water and Power, and MWD. SoCalGas also continued working SCE and PG&E to deliver joint programs and services in the statewide programs.

The demand for program partnerships with municipal utilities from both SoCalGas program teams and the partner utilities' continued to be robust. However, this demand also needed to be balanced with the availability of program resources. Consequently, both SoCalGas and partner utilities agreed to prioritize program launches based on their impact and strategic importance.

SoCalGas' energy efficiency team continues to work closely with the ESAP team to refine communication and coordination strategy to ensure that customers, particularly multifamily ones, receive comprehensive services and incentives regardless of the occupants' income qualification.

SoCalGas has conducted numerous joint EE/ESAP marketing sessions in 2016, including participation in 113 residential events and 29 business events.

SoCalGas further developed and enhanced the IDSM knowledge and capabilities of its internal staff, through in-person joint meetings both internally and with municipal utility partners. SoCalGas' staff continued working internally to ensure integration among different categories of programs (e.g. EE, ESAP, solar thermal), as well as externally with municipal and investor-owned utilities to ensure integration of natural gas/electric/water efficiency, solar, demand response and advanced metering offerings, particularly for the multifamily sector where SoCalGas assigned dedicated multifamily account executives to work exclusively with large multifamily portfolio owners in its territories. Additionally, SoCalGas continued to market its utility partnership model to other utilities and external entities by participating and presenting the model in national conferences such as ACEEE's Summer Study on Buildings in 2016.

Statewide Financing Programs

Energy efficiency finance offerings are designed to facilitate the adoption of energy efficiency by addressing one of the major barriers to participation: up-front costs. Additionally, finance enables customers to take a holistic approach to projects and acts as a catalyst to implement improvements regardless of capital budgets or schedule constraints. The offerings are designed to help customers produce deeper energy savings. The Statewide Financing options are growing beyond the traditional On-Bill and ARRA-originated Financing programs with the introduction of new financing pilots authorized by the Commission.

SCG3735 Statewide On-Bill Financing

Statewide On-Bill Financing (OBF) offers interest-free, unsecured, on-the-utility-bill loans that work in conjunction with utility energy efficiency programs. It is designed primarily to facilitate the purchase and installation of qualified energy efficiency measures by non-residential customers who may lack up-front capital to invest in real and sustainable long-term energy cost reductions. Loan terms range from up to five years for commercial customers and up to ten years for government agency customers. The eligible loan amount is based on the project cost, less incentives or rebates, up to the loan maximum of the OBF product and within the loan term thresholds. Customer loans are repaid through a fixed monthly installment on their utility bills. There is no prepayment penalty and loans are not transferable. Partial or non-payment of loans could result in shut-off of utility service.

During 2016, the OBF program continued working with SoCalGas customer representatives and equipment vendors to encourage customers to participate. The OBF program marketing materials were refreshed in various marketing brochures as well as SoCalGas' energy efficiency webpage promoting SoCalGas' energy efficiency programs. The OBF program was closely coordinated with the Local Government Partnerships and Institutional Partnerships on a number of local and state government projects. By the end of year, seven energy efficiency projects were financed through OBF.

In 2013, the OBF Program was reclassified by the California Public Utilities Commission as a resource program. The Commission has indicated more information is necessary to support a work paper that can address energy savings related to Financing Programs, so at this juncture, SoCalGas does not have energy savings to report for 2016. The Commission indicated that actual energy savings will be determined through its evaluation, measurement and verification studies. However, OBF continued to serve as a funding mechanism for other energy efficiency programs and, as such, helped other programs meet their program savings objectives.

There was one program design change to the OBF program in 2016. Institutional customers had the opportunity to take advantage of an increased loan term and maximum loan amount (15 years and up to \$2 million, respectively). The key implementation barrier for natural gas-only OBF continues to be the long payback periods for natural gas equipment. Project payback periods for most gas projects tend to be much longer than the five -year maximum required for business projects to qualify.

SCG3736 ARRA Originated Financing

The American Recovery and Reinvestment Act (ARRA) Originated Programs utilize ratepayer support to continue successful ARRA-funded programs. These programs were designed to encourage the implementation of comprehensive energy efficiency retrofits by providing access to affordable financing options. SoCalGas has previously provided support for the following two ARRA continuation finance programs:

emPowerSBC is a comprehensive single-family residential financing program administered by the County of Santa Barbara and is a co-funded effort among PG&E, SCE, and SoCalGas. The program receives funding for various programmatic activities including marketing and workforce training within the Santa Barbara, Ventura, and San Luis Obispo counties (Tri-Counties). Additionally, there is a credit enhancement budget of up to \$1 million for a loan loss reserve (LLR). emPowerSBC provides unsecured loans for homeowners to implement home energy upgrades resulting in lower energy usage, reduced utility costs, and increased indoor comfort. The program leverages ARRA and ratepayer funding to create a public private partnership among the County, all eight incorporated cities within the County, Energy Upgrade California Home Upgrade Program, and two competitively selected local credit unions.

During 2016, emPowerSBC continued to engage various stakeholders including customers and contractors in an effort to promote program participation. One of emPower's goals for 2016 was to increase program uptake, leveraging financing as a means for investment in energy efficiency improvements. For the year, the emPowerSBC program closed 11 loans with a value of over \$250,000. Since its inception in 2013, emPower has closed 33 loans with a total loan amount of over \$700,000. There have been no loan defaults reported.

The City of Los Angeles: ARRA Property Assessed Clean Energy (PACE)/ Los Angeles Better Buildings Challenge (LABBC) Assistance Program was initially launched and funded in 2011 as a joint effort between Los Angeles County and the City of Los Angeles using ARRA grant

funds. The City marketed the program, provided free audits, and created a Debt Service Reserve Fund for property owners in the City of Los Angeles using its ARRA funds. The County acted as the program administrator creating the legal documents and the assessment district, issuing PACE bonds to investors and providing the payment mechanism through the property tax system. At the direction of the City, this program element was eliminated in 2016.

The Commission requires additional information for the development and approval of a workpaper for energy savings, therefore the ARRA Originated Programs did not report energy savings for 2016. Additionally, the ARRA Programs are pilots and have not yet established program performance metrics. The Commission is preparing a cost-effectiveness study on ARRA programs which is expected to be finalized in mid-2017.

SCG3737 New Financing Offerings

The IOUs are developing a set of statewide financing pilot programs that offer scalable and leveraged financing products and test market incentives in the form of credit enhancements and on-bill repayment for attracting private capital. The pilots consist of the following on-bill repayment (OBR) 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; and the Residential Energy Finance Line Item Charge (EFLIC) Program. The EFLIC Program is only offered in PG&E's service territory. The pilots also consist of two off-bill programs: Single Family Loan Program (aka Residential Energy Efficiency Loan or REEL) and Off-Bill Small Business Lease Providers Program.

The pilots will include ratepayer-supported credit CEs 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 energy efficiency projects. The Financing Pilots will be administered by the California Alternative Energy and Advance Transportation Financing Authority (CAEATFA).

The first regular track program (REEL) launched in July 2016. CAEATFA, Center for Sustainable Energy (CSE), and SoCalGas, SCE, PG&E, and SDG&E began coordinating marketing, education, and outreach efforts to both the contractors and consumers in support of the pilot program. The remaining pilots, including the OBR programs, are scheduled to launch in late 2017.

The New Financing Offerings program focused on establishing requirements for transmitting electronic files to support the secure transmissions of third-party OBR charges to place on the utility bill and subsequent remittance of customer payments to the lender. In January 2016, CAEATFA and the utilities, along with the Master Servicer, created the Data Exchange Protocol (DEP). The DEP established the file types, file format, and frequency of file exchanges between the utilities and Master Servicer as part of the on-bill repayment loan enrollment and remittance process to participating lenders for all OBR programs. External system integration testing between the utilities and Master Servicer commenced in May 2016, with three of the utilities completing testing by November 2016.

CAEATFA management expressed a need for long-term funding to mitigate resource constraints that could impact the timing of the launch of remaining pilots. In November 2016, the Commission issued a Joint Ruling of Assigned Commissioner and Administrative Law Judge on Financing Pilots and Associated Marketing, Education, and Outreach Activities which granted CAEATFA additional funding as requested.

SCG3803 California Hub for EE Financing

The California Hub for Energy Efficiency Financing (CHEEF) was established to design and implement seven new statewide financing pilots. The CHEEF infrastructure coordinates the flow of third-party private capital to fund energy improvements, manage the availability of project, loan, and energy consumption data, and ensure a streamlined process for program participants. Key components of the CHEEF infrastructure include a Master Servicer responsible for the day-to-day administration of the program, a trustee bank responsible for holding and transferring ratepayer funds used for credit enhancements, a contractor manager that provides quality assurance and control (QA/QC) for finance-only projects, and data manager that will make anonymized and aggregated program data available to the public.

In Decision (D.) 13-09-044, the Commission requested the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) take on the role of CHEEF manager. CAEATFA is responsible for administering the CHEEF, which includes developing program regulations for the Financing Pilots, operationalizing program processes and forms, and managing outreach efforts to both contractors and financial institutions. SoCalGas is the lead utility for the Financing Pilots Program and contract administrator for the CHEEF agreement.

CAEATFA launched the Residential Energy Efficiency Loan (REEL) Assistance Program and enrolled its first loan in July of 2016. The program went on to enroll six loans in its first six months of operation. In addition, CAEATFA recruited two statewide financial institutions and two regional lenders. Contractor recruitment and training for REEL also began in 2016 and concluded the year with 171 contractor companies completing the required training, 76 of which enrolled in the program. The REEL program's initial pilot term is expected to end July 2018.

CAEATFA continued development of the commercial pilots in 2016, including exploring a finance-only path that would finance projects not covered by utility programs. CAEATFA is considering incorporating the Investor Confident Project (ICP) protocols for finance-only projects. CAEATFA and ICP staff coordinated several trainings for IOU engineers and reached out to contractors to explore interest in using the protocols. CAEATFA also conducted a series of workshops to help inform the regulatory process that will continue into 2017.

In 2016, CAEATFA requested an additional \$8.36 million in administrative funds and staff resources through fiscal year 2019-2020. In November, the Commission approved CAEATFA's request and authorized the amount to be shifted from the reserved budget that was set aside for the finance pilots.

The Data Exchange Protocol (DEP) was approved in January 2016 and outlines the process by which data points, file layout, and payments between the IOUs, the master servicer, and lenders occur. The approval allowed the IOUs to start development of their IT systems and to modify their billing systems to accept financing charges on the bill. By the end of 2016, all but one of the four IOUs had successfully completed OBR functionality testing with the master servicer.

During 2016, SoCalGas was actively involved in supporting CAEATFA with launching the REEL program, developing and testing OBR functionality with the master servicer, engaging in the development of the commercial pilots, and assisting with securing additional administrative budget through comments and support. SoCalGas helped CAEATFA enroll contractors by assisting in trainings through its Home Upgrade contractor network. SoCalGas also managed the CHEEF agreement, including administration of quarterly invoicing and reporting activities and led efforts to amend the CHEEF agreement to meet program and administrative objectives.

Institutional Partnerships

Institutional Partnerships are designed to create dynamic and symbiotic working relationships between IOUs, state or local governments and agencies or educational institutions. The objective is to reduce energy usage through facility and equipment improvements, share best practices, and provide education and training to key personnel. In 2016, the Institutional Partnerships addressed programmatic challenges impacting energy efficiency projects at the campuses and state facilities as well as providing a concentrated effort to support shared energy efficiency, ZNE, and environmental goals. As described in the energy efficiency Business Plan development process, Institutional Partnerships will be considered part of the Public Sector Program portfolio. Through the energy efficiency Business Planning process, SoCalGas worked with partners to engage them in identification of challenges facing higher education and state agencies, as well as included them in the development of Public Sector strategies.

SCG3738 California Department of Corrections and Rehabilitation/IOU Partnership

The California Department Corrections and Rehabilitation (CDCR)/IOU 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 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 Commission objectives. The program also leverages the existing contractual relationship between CDCR and energy service companies (ESCOs) to develop and implement energy projects in CDCR facilities.

Overall the CDCR Partnership is expected to meet or exceed the 2016 energy savings goals. Regular management team meetings (every 4 weeks) and executive team meetings (quarterly) with the Program Administration Manager (PAM) have been key to identifying and managing projects, and to proactively addressing any challenges the program may have faced. CDCR uses over half of the energy consumed by state agencies under the Governor’s executive authority; however, CDCR’s budget for implementing energy efficiency projects is minimal. With the CDCR/IOU EE Partnership, efficiency projects can be identified and implemented through the IOU core and On Bill Financing Programs.

The CDCR Partnership faces an ongoing challenge of finding funding for projects. On Bill Financing has been and remains the primary source of funding and is supplemented by Special Repairs Project funding. CDCR has also leveraged CEC Revolving Fund Loans in the past. CDCR has been working directly with the Energy Division to discuss difficulties encountered advancing projects through the Partnership. A number of projects have been placed on hold until resolution is reached on how CDCR’s projects may be technically reviewed, given that the commercial customer segment may not match CDCR’s operating conditions; CDCR will continue to work with Commission staff so that projects may continue to be advanced and implemented.

SCG3739 California Community Colleges/IOU Energy Efficiency Partnership

The California Community Colleges (CCC) / IOU Energy Efficiency Partnership is a unique, statewide program to achieve immediate and long-term energy savings and peak demand reduction within California’s higher education system. SoCalGas and the other IOUs provided funding for the 2013-2016 program cycle to maintain the Partnership program processes and framework established in previous program cycles for sustainable, comprehensive energy management at campuses served by California's four IOUs.

The program has a hierarchical management structure to ensure successful implementation. The management team met monthly to conduct business at the management level, whereas the executive team met quarterly to discuss overall program status and policy issues. The Partnership also has an outreach team that focused its efforts in several areas, including: (1) conducting site visits to educate and update college and district staff on the benefits of the partnership (including regional facilities workshops for campus facilities and energy managers), and (2) planning and participation in CCC conferences (including the CA Higher Education Sustainability Conference and Community College Facility Coalition Conference). In addition, campus forums were hosted quarterly at campuses across the State, serving as a venue for districts to share successes and strategies for overcoming obstacles. At a project level, the partnership continued regular project status meetings between the IOUs and the Program Administration Management (PAM) to document implementation progress, identify and resolve issues, and drive project completion.

The CCC/IOU Partnership has provided extensive support for the CCC efforts to identify, develop, and implement projects funded through Proposition 39. These services included funding enhanced outreach, project development, and technical support for 72 districts

containing 112 campuses throughout California. This resulted in the identification, funding, and closeout of nearly 100 CCC/IOU Partnership projects in SoCalGas territory. Furthermore, this support has continued to develop a sizeable pipeline of projects in SoCalGas territory that are slated to be completed by the end of 2018. A majority of these remaining projects require design and/or Division of the State Architect (DSA) approvals, which slow project timelines down.

On the administrative side, the partnership continued to improve upon its existing management structure and refine its processes to ensure its efforts were both efficient and effective. There was a significant additional push among participating IOUs, to coordinate with other tangential offerings by the IOUs, which would be beneficial to the partnership's members. This included increased efforts to enroll participating customers in On Bill Financing programs to reduce upfront project costs, and greater integration of each IOUs Savings By Design teams into existing program management processes. Held a Partnership "Visioning" meeting in January with participation from the full Management Team where the mission, goals, and implementation strategies for the Partnership were discussed and updated. The result was the publishing of a Partnership Strategic Plan in April of 2016.

Despite the above successes, 2016 was also a transitional year for the CCC/IOU Partnership. Changes in leadership at the Chancellor's Office as well as CPUC guidance required changes to longstanding processes to allow SoCalGas to meet its partnership goals. Finally, the partnership was challenged by the reduction of projects that qualify for IOU incentives, even/especially deemed or express rebates.

SCG3740 UC/CSU/IOU EE Partnership

The University of California/California State University/Investor Owned Utility (UC/CSU/IOU) EE Partnership is a statewide program which includes California's four IOUs, as well as the recent addition of Los Angeles Department of Water and Power (LADWP), in partnership with the UC and CSU systems. The program generates energy savings through the identification and implementation of energy efficiency projects and through training and education to support those projects. The Partnership consists of three main project types: retrofit, monitoring based commissioning (MBCx), and new construction.

The program has a hierarchical management structure to ensure successful implementation. The management team meets every three weeks to conduct business at the operational 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 energy efficiency trainings targeting university campuses. In addition to IOU representatives, the UC Office of the President and CSU Chancellor's Office each have members on all three program management teams to provide the UC and CSU campuses with support in their efforts to implement energy efficiency projects. A Program Administrative Manager (PAM) organizes and facilitates team activities, works with individual stakeholders, 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.

This year, LADWP was added to the Partnership, allowing UCLA, CSU Northridge, and CSU Los Angeles to receive enhanced incentives for kWh savings, which were previously unavailable. The campuses were already part of the Partnership through SoCalGas, however, the addition of LADWP enhances campus ability to pursue comprehensive projects with both gas and electric savings. Additionally, LADWP representatives were integrated into the management and executive teams.

There were other notable successful efforts in 2016. For example, a Partnership Data Dashboard was developed, allowing partners to easily access and export current and historical Partnership project data. This new dashboard also contained a variety of interactive graphs and hosts reports measuring the progress of the Partnership. The training and education team also hosted various events, such as: a Campus Forum focused on Net Energy Metering (NEM) 2.0 and Non-Utility Supply Guidance; an Energy Managers' Meeting which served as a post-conference workshop of the California Higher Education Sustainability Conference; and four workshops addressing Zero Net Energy on university campuses. In addition, a new Training and Education scholarship program was implemented, granting funding to each UC and CSU campus to attend the energy efficiency related training(s) of their choice, as approved by the Partnership.

Some campuses were reluctant to pursue certain projects or felt limited in being able to do so due to the lack of published guidance on non-utility supply hourly analysis. In addition, current Commission policy requiring energy savings above code (Title 24) and industry standard practice baselines is not always aligned with determining project financial impact to support project financing or translating savings to carbon reductions to meet university carbon goals. MBCx offerings at the various IOUs were discontinued in 2016, limiting project opportunities for UC and CSU. Additionally, many custom measures were moved to deemed, decreasing the claimable energy savings and incentives received by universities.

SCG3741 State of California/IOU Partnership

The State of California/IOU Partnership is a Statewide program designed to achieve immediate and long-term peak energy demand savings and establish a permanent framework for sustainable, comprehensive energy management programs at state facilities served by California's four large IOUs. This is accomplished by collaborating with the Department of General Services (DGS) in establishing an energy service company (ESCO) pool to help facilitate implementation of energy efficiency projects. In addition, the revival of the Department of Finance Energy \$Mart program will provide financing for project opportunities.

The State of California Partnership is a continual and collaborative effort to support the DGS to manage projects for Departments without contracting authority. The Judicial Council of the Courts is also working with the IOUs to implement projects in courthouse buildings obtained from the Counties in the state. For the first time in the history of the State/IOU Partnership, a Program Administration Manager (PAM) was hired by the four IOUs. The PAM's role is to coordinate between the IOUs and ensure that project documentation is shared as needed, projects are tracked, and customer concerns/support items are addressed in a coherent and synergistic fashion.

The DGS continued identifying projects for their ESCO pool for the Statewide Energy Retrofit Program; and with IOU support, ensured that the request for proposals (RFPs) included energy efficiency and utility incentives as an integral requirement for project proposals. This ESCO pool is being used to implement energy efficiency projects. An additional pool of ESCOs was created to assign smaller projects for which individual bidding would be time-consuming. The DGS has overcome various hurdles in developing the ESCO pool program including many financing and legal barriers. This process has taken some time and considerable effort due to perceived legal issues with how the DGS works on behalf of other California agencies and departments.

The IOUs attended the Sustainable Building Working Group meetings, a State of California working group that consist of agency sustainability managers, with the task of planning and implementing all aspects of B-18-12, the Governor’s Executive Order. The IOUs attend in a supporting role to ensure that agency needs regarding energy data for benchmarking are met. The IOUs also use this platform for agency outreach.

Local Government Partnership

SoCalGas’ Local Government Partnership (LGP) is unique, complex and multi-dimensional partnership with local government customers. First, local governments are a distinct customer segment that operates with their own unique challenges and needs related to energy efficiency. Second, local governments also serve as a delivery channel for specific products and services when they serve as LGPs. Finally, local governments have a unique role as leaders of their communities. Increasingly, local governments are interpreting their responsibility for community well-being to include reducing GHG emissions, increasing renewable energy usage, protecting air quality, creating green jobs, and making the community more livable and sustainable.

The Local Government Partnership is designed to serve and support local governments by increasing energy efficiency in municipal facilities, provide programs and services to local communities that can help them reduce both operating costs, and greenhouse gas emission levels through energy-efficiency. In 2016, SoCalGas supported Partnerships in achieving their energy efficiency and climate goals. Through the energy efficiency Business Planning process, SoCalGas worked with partners to engage them in the identification of challenges faced by local governments, as well as included them in the development of Public Sector strategies. Moving forward, the Local Government Partnerships will be considered part of the Public Sector Program portfolio.

SCG3742 LGP-LA County Partnership

The County of Los Angeles Partnership supports the energy reduction and environmental initiatives described in the Los Angeles County Energy and Environmental Plan, adopted in 2008, and the objectives of the California Long Term Energy Efficiency Strategic Plan (CLTEESP). Energy Efficiency (EE) projects are focused on County-owned and Municipal

buildings, consisting of lighting, HVAC, Retro-Commissioning, steam boilers, and Savings-By-Design new construction projects at each of the 38 County departments served by Energy Management (County Internal Services Department). Additional efforts with the County Office of Sustainability include program support and coordination for Energy Upgrade California, and strategic plan solicitation activities that expand the County's Enterprise Energy Management Information System (EEMIS), allowing Los Angeles County to receive participating city data for analysis to help the city to better manage their energy usage and support the identification of EE opportunities.

The Partnership participated in various successful collaborations during 2016. The Partnership, for example, collaborated with the Los Angeles County Internal Services Department (ISD) to capitalize on EE opportunities by working with representatives from the 38 county departments served by ISD for energy management services. Partnerships worked together with ISD, Public Works and the Metropolitan Department of Transportation on strategies to develop energy savings opportunities and strategic implementation forecasts. The Partnership also collaborated with the County Office of Sustainability to provide information to Los Angeles County departments regarding programs offered to improve awareness of EE incentives and rebates.

Other program successes included the initiation and/or completion of Retro-Commissioning projects and EE retrofits throughout county facilities, successfully contributing terms to the core rebate and incentive programs. The Partnership also provided strategic planning support for the set up to transfer data to Los Angeles County's EEMIS to support local governments enrolled in the Partnership.

The County has expressed concerns over measures being removed from custom incentive program due to standard industry practice policies. This policy makes it very difficult to justify moving forward with projects due to higher implementation costs for higher efficiency products.

SCG3743 LGP-Kern Energy Watch Partnership

Kern Energy Watch (KEW) Partnership brings together three utilities, PG&E, SCE, and SoCalGas with twelve local governments to improve energy efficiency throughout Kern County. The County of Kern serves as the implementer and coordinates the energy efficiency efforts of the County of Kern, and the cities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

In 2016 the Partnership increased its focus on providing useful data to partners from which they could begin to make business decisions. This meant starting with an increased effort to get all partners on board with benchmarking. The Partnership utilized the services of the San Joaquin Valley Clean Energy Organization (SJVCEO) and started with the largest partner (County of Kern). The County had over 700 accounts which required just over three months to get fully benchmarked. The implementer then continued on with additional partners that desired to have their accounts benchmarked as well. KEW had two additional partners, Taft and Shafter, begin the processes necessary to complete benchmarking of their accounts and those services will continue into 2017 for them and additional partners.

The implementer met with the Greater Bakersfield Chamber of Commerce to discuss utilizing them to distribute energy efficiency information to their small and medium business (SMB) clients. It was determined that Partnership would develop a target campaign for their restaurant members, as they have seen a huge increase and turnover in this segment. The chamber agreeing to partner with the Partnership gives greater access to those SMB owners. KEW can also educate them on programs for residents, as they are not only business owners but residents as well. KEW will continue to develop this campaign into 2017 and then replicate it with additional Chambers.

KEW partnered with the County of Kern's 4th District Supervisor to provide energy efficiency information to residents in the cities of Derby Acres, Valley Acres, Ford City, and Northwest Bakersfield. EE information was handed out to over 200 residents. KEW also partnered with the City of McFarland and the Kern County Public Health Dept. to distribute EE information to residents during a street fair. Over 100 residents were served.

The Partnership barriers have been a continued change in leadership and representatives in the partner cities. Also, due to budget constraints, energy efficiency has taken a back seat to higher priorities in some of the municipalities. Having continued dialogue and providing them with free or low-cost services such as benchmarking and direct install have been ways of keeping them engaged throughout the year.

SCG3744 LGP-Riverside County Partnership

In 2010, the County of Riverside (County) formed a Partnership with SCE and SoCalGas which is intended to assist the County in achieving its green policy initiatives and formulate an integrated approach to energy efficiency. This collaborative effort aims to build an infrastructure that would efficiently deliver cost-effective energy efficiency projects to reduce the "carbon footprint" created by County facilities.

The Partnership improves energy efficiency in the County's municipal facilities and leverages utility resources, customized to the County's unique needs, to advance energy efficiency in the partners' facilities. The Partnership also supports the County in meeting carbon dioxide reduction requirement efforts required in Assembly Bill 32, as well as contributing toward meeting Commission energy savings goals and objectives.

While overall the Partnership had difficulties meeting its 2016 goals, there were areas where it proved to be successful. For example, the Partnership was able to retrofit several boilers within the County that resulted in therm savings and an eligible incentive. In addition, the County of Riverside was selected to present on Partnership Best Practices at the 7th Annual Statewide Energy Efficiency Forum which was held in Riverside.

The Partnership was challenged to support the County with many energy efficiency retrofits because the County is determining their strategic direction and whether to implement projects

through an energy service company (ESCO). Due to the loss of third party programs the county successfully used in the past, it has been difficult for them to launch new EE projects.

SCG3745 LGP-San Bernardino Co IOU Partnership

In 2010, SoCalGas joined the San Bernardino County Partnership Program, a continuation of the 2009 partnership between SCE and the County of San Bernardino. The Partnership assists the County in achieving its green policy initiatives to formulate an integrated approach to energy efficiency. This will be a collaborative effort with the aim to build an infrastructure that would efficiently deliver cost-effective energy efficiency projects, thus reducing the “carbon footprint” created by County facilities. County facilities are targeted for retrofits, retro-commissioning (RCx) and new construction elements.

Although energy audits led to therm saving projects delivered through SoCalGas core programs in 2016, the overall therm savings goal for the Partnership was not reached. However, there are a significant therm savings that have been identified in audits and are in the queue for implementation in 2017. An example of one of these therm-savings projects is a controls project at the County’s Twin Peaks facility that was identified in a joint audit.

The partnership held monthly Management Team meetings to discuss program status, project tracking, and overall program implementation and coordination issues. In addition, meetings were held regularly with project managers from various County departments to identify opportunities and provide information available on SoCalGas resources and other core program offerings. The top County facilities with the greatest opportunity for reduction in energy consumption were identified and were targeted for retrofit, RCx, and new construction elements. Leveraging County management staff from various departments including Special Districts, Sheriff, Information Technology, Library, Fire, and project managers in the Engineering and Architecture Department, has proven to be an effective means in identifying opportunities that would have not otherwise been supported by SCE or SoCalGas programs.

The partnership worked to educate the County of San Bernardino project managers and staff on the importance and value of energy efficiency. This motivated the county’s staff to look for opportunities to reduce their operating costs by implementing energy efficiency projects and conservation practices.

SCG3746 LGP-Santa Barbara County Partnership

There are two distinct partnerships for Santa Barbara County- South County and North County.

South County Energy Efficiency Partnership

The South County Energy Efficiency Partnership (SCEEP) includes SCE, SoCalGas, and municipal governments within the County of Santa Barbara - including Santa Barbara County and the cities of Santa Barbara, Goleta, and Carpinteria. The program generates energy savings through identification of municipal energy efficiency projects, education and training, and

marketing and outreach. Cities complete retrofits of their own facilities and conduct community sweeps as well as outreach to residential and business communities to increase participation in core utility programs. A local non-profit, the Community Environmental Council, facilitates administrative and programmatic support to the Partners.

Throughout 2016, SCEEP continued to drive city leaders, residents and businesses toward energy efficiency actions through the following activities: education and outreach, business support, and direct implementation. SCEEP partners participated in several community exhibits and outreach events in 2016. Events included the Santa Barbara Earth Day Festival, The Central Coast Sustainability Summit, Local Government Commission Statewide Energy Efficiency Collaborative (SEEC) meeting, presentation on “Zero Net Carbon” goals through energy efficiency in the building sector, and a SCEEP Awards Luncheon to honor SCEEP partners for the contributions they made to increase energy efficiency in Santa Barbara County’s southern region. SCEEP also hosted a training session for municipal partners, on Title 24 building code training, and organized two informational sessions on battery storage technologies for partners.

SCEEP continued to partner with the countywide Green Business program, a voluntary certification program. More than 84 businesses have been certified through the program to date. Using modelling tools from the statewide Green Business Network, the partnership compiled data from current certified businesses to calculate annual savings.

Energy efficiency activities at the facilities of the government partners included incentives, rebates, and payment structures, such as OBF, municipal partners were able to pursue the following projects:

- City of Carpinteria – began three projects within their pool facilities and a phased project to upgrade City Hall to address HVAC concerns. Three outdoor lighting projects (all city owned) were also completed in 2016.
- City of Santa Barbara - Building Automation System (BAS) controls were installed at Carrillo Recreation Center; water controls were installed at Elings Park; Savings By Design project at the police station was completed; the City completed a streetlight project; additional street light projects will be installed in 2017; launched a revolving fund that accumulates monies saved by energy efficiency projects, to allow for future project investments; updated all of the outdoor lighting at The Cater treatment plant; and initiated a project for LED bi-level lighting at the Granada garage, which will serve as a pilot project for other City of Santa Barbara parking lots in the future.
- County of Santa Barbara - working to get a 2% surcharge on general services passed as a method to pool funds to conduct energy efficiency work and enacted an approved Zero Net Energy resolution which requires all new Santa Barbara County owned facilities and major renovations beginning design after 2025 to be constructed as Zero Net Energy Facilities with an interim target for 50% of facilities beginning design after 2020 to be Zero Net Energy.

Despite these efforts, the SCEEP is falling short of expectations because of serious difficulties to identify and complete energy efficiency projects.

North Santa Barbara Energy Watch Partnership

The Santa Barbara County Energy Watch Partnership is a joint effort between PG&E, SoCalGas and the Santa Maria Valley Chamber of Commerce. The Partnership's participating municipalities are Buellton, Solvang, Guadalupe, Santa Maria and the County of Santa Barbara. The program generates energy savings through identification of municipal EE projects and Direct Install projects for businesses; savings from these projects are delivered through the core programs. The program also provides education, training, marketing, and outreach for all utility energy efficiency core programs.

In 2016, the Energy Watch programs continued to improve upon existing program strategies to address the community's needs. The Partnership continued outreach to activities across the region, with an emphasis on small, hard to reach communities which saw the re-instatement of outreach workshops. Other outreach and education activities were conducted by the program administrator and manager, to coincide with Energy Awareness Month, to the City Councils of Santa Maria, Solvang, and Buellton, and the Santa Barbara County Board of Supervisors. Specific outreach campaign efforts included a website, one on one contact with businesses, direct mailers, media advertising, direct presentations, and radio interviews. In support of this work, the Partnership updated its marketing materials, produced new marketing materials, and expanded its marketing outreach.

In 2016, collaborated with other organizations and agencies to extend its reach in promoting energy efficiency to businesses and residences. An example of this was its continued collaboration with the Santa Barbara County Green Business Program, EmPower Central Coast, and other agencies and organizations to extend the outreach message of energy and sustainability to the Partnership's communities. In addition, the Partnership had a sponsorship presence and made presentations at events, including the Santa Maria Chamber of Commerce Annual Trade Show, and the Solvang Grow Your Community Expo. The success of these relationships was evident in that the Santa Barbara County Energy Watch Partnership received proclamations and resolutions from Santa Maria, Buellton, Solvang and the County of Santa Barbara during 2016.

While the Partnership had areas of great success in 2016, benchmarking with cities and municipalities proved difficult to accomplish.

SCG3747 LGP-South Bay Cities Energy Efficiency Partnership

The South Bay Cities Council of Governments (SBCCOG) Energy Efficiency Partnership Program provides integrated technical and financial assistance to help the South Bay Cities effectively lead their communities to increase energy efficiency, reduce greenhouse gas emissions, increase renewable energy usage, protect air quality and ensure that their communities are more livable and sustainable. The Program provides a performance-based opportunity from SCE and access to all SoCalGas core programs and incentives for member Cities to increase energy efficiency in local government facilities and their communities through energy saving actions.

During 2016, the SBCCOG Partnership exceeded the term goal for savings delivered through the core utility programs. In addition, to delivered term savings, the Partnership conducted marketing and outreach activities in its member communities. This included hosting five workshops, delivering 20 presentations, leading three volunteer trainings, participating in two business expos, hosting three SCE seminars, exhibiting at over 80 events, hosting ten employee events, and conducting 30 overviews of SBCCOG programs. Through the various marketing and outreach opportunities, over SoCalGas energy efficiency kit cards were collected.

SCG3748 LGP-San Luis Obispo County Energy Watch Partnership

San Luis Obispo County Energy Watch (SLOEW) is a partnership amongst the County of San Luis Obispo (County), PG&E, SoCalGas, and participating cities and special districts. SLOEW is a comprehensive program that provides information and energy management services to targeted customers regarding energy use and cost associated with facilities and infrastructure. SLOEW also assists with the monitoring and implementation of the County's EnergyWise Plan, which was adopted in November 2011 and aims to reduce GHGs in accordance with state mandates. The mission of the SLOEW Partnership is to contribute to a vibrant and resilient San Luis Obispo County through reduced energy cost, use, and demand, and decreased greenhouse gas emissions. SLOEW recently re-prioritized the partnership's goals around distinct programs and target customers via a robust strategic action planning process. By serving as customers' "staff extension", SLOEW has positioned itself to manage all aspects of energy efficiency projects including education/outreach, technical/engineering, budgeting/ financial, and procurement.

In 2016, the SLOEW Partnership continued and expanded their Energy Management Programs for the municipality, county, and special districts. In 2014, SLOEW launched the Special District Energy Management Program (SDEMP), the following year the County Energy Management Program (CEMP) rolled out, and then in 2016 the Municipal Energy Management Program (MEMP) went live. These programs inventory and benchmark the energy use and cost of building facilities and utility infrastructure on a bi-annual basis for each of the targeted areas. SLOEW staff work with department personnel on inventory, benchmarking, and reporting efforts. The Partnership provides energy performance information and conducts assessments for buildings and infrastructure to help select, finance, and implement projects that improve operations, reduce energy costs, and decrease GHG emissions. Once projects have been implemented, SLOEW monitors energy usage, costs, and building performance over time. SLOEW engaged PG&E and KW Engineering to offer the Large Integrated Audit (LIA) program to nine Community Services District (CSDs) in the county, to identify energy efficiency, generation, load management, and demand response opportunities via the SDEMP.

In 2016, the projects that were generated through the energy management programs included a complex wastewater aeration retrofit project for San Miguel CSD, implementing a lighting project for Los Osos CSD, and advancing a freshwater project for Los Osos CSD. For continuing CEMP, SLOEW engaged PG&E's Sustainable Solutions Turnkey (SST) program, which is a design-build energy efficiency retrofit project that leverages public-private partnerships to streamline implementation of energy efficiency projects using money saved from energy and operational efficiency. Detailed assessments were conducted of several facilities and

recommendations were provided for measures including lighting, heating and cooling, and energy management control upgrades at several County facilities. The implementation of finalized SST measures began in 2016.

SLOEW continued to operate the Climate Services Program, which supports and coordinates the County's implementation of measures identified in the County's EnergyWise Plan (Climate Action Plan). Staff provides tracking and reporting of the County's progress towards its goals of reducing energy use from County facilities by 20% and overall greenhouse gas emissions (GHG) by 15% from baseline levels (2006) by 2020 through monitoring of the implementation measures.

Other notable SLOEW efforts in 2016 included: baseline and benchmark reports for all incorporated cities in the county, updating the County's Energy Wise Plan, involvement in the SEEC Forum as well Local Government Partner meetings, and staff participation in re-development of Rural and Hard-To-Reach working group addressing challenges faced by implementers in delivering energy efficiency services to rural areas in the state.

SCG3749 LGP–San Joaquin Valley Partnership

The Valley Innovative Energy Watch (VIEW) is a Local Government Partnership (LGP) between PG&E, SCE, SoCalGas, and local governments in Kings and Tulare counties (Kings County, cities of Avenal, Corcoran, Hanford, and Lemoore; Tulare County, cities of Dinuba, Farmersville, Lindsay, Porterville, Tulare, and Woodlake). The partnership is implemented by the San Joaquin Valley Clean Energy Organization (SJVCEO).

The VIEW Partnership identifies opportunities for improved energy efficiency in municipal infrastructure; offers customized incentives for municipal projects; conducts energy efficiency trainings; hosts and participates in outreach events to drive participation in core utility programs; and supports the California Long Term Energy Efficiency Strategic Plan. The Partnership supports peer best practice sharing through the Peer to Peer Working Group (P2P), the Rural Hard to Reach Local Government Partnerships' Working Group (RHTR), the San Joaquin Valley Energy Watch Collaborative (SJVEWC), and the California Energy Efficiency Coordinating Council (CAEECC) as a general member, and on the Public Sector and Cross Cutting subcommittees.

The VIEW partnership performed and participated in many vital organizations, groups and councils to promote and become the voice for the San Joaquin Valley. The partnership efforts not only showed the need for local government partnerships, but also increased participation with partnering cities. They promoted the core programs, Energy Action Plans, and performed community outreach events that helped the community save energy. This focus resulted in the following achievements:

- Performed continued maintenance on roughly 4,000 Energy Star Portfolio Manager accounts.
- Updated and/or completed Energy Actions Plans for County of Kings as well as the cities of Hanford, Dinuba, Lindsay, and Woodlake

- Obtained supplemental funding to support Partnership interests and efforts.
- Participated in P2P, SJVEWC meetings, RHTR monthly member calls and quarterly meetings, CPUC Energy Division Statewide Advisory Group calls, SEEC Forum, and city council meetings.
- Became a party to CPUC proceeding 17-01-013 with RHTR for which formal comments were filed in support of IOU administration of LGPs and in opposition to the LGSEC proposal for statewide administration of LGPs.
- Partnership implementer joined the CAEECC as a general member and Public Sector subcommittee co-chair (as the non-Program Administrator representative, shared with SoCalREN). This resulted in participation in 17 CAEECC and ad hoc CAEECC meetings as well as 15 Public Sector subcommittee calls with co-chair, program administrators and CAEECC co-chair.
- Participated in IOU LGP study with Research in Action and CPUC LGP study with Evergreen Economics.
- Hosted the VIEW the Success! Annual recognition luncheon as well as the information table at the Visalia Earth Day event, Kings County Employee BBQ and Tulare County Health Fair.
- Co-hosted with San Luis Obispo Energy Watch, PG&E, SCE, and SoCalGas the Central California LGP Meeting (CenCal Meeting) in San Luis Obispo as well as the in-person meeting of the RHTR and PG&E, SCE and SoCalGas in coordination with the CenCal Meeting.
- Conducted Rural Outreach Events (ROEs) in Armona (Kings County), London (Tulare County) and Kettleman City (Kinds County).

SCG3750 LGP-Orange County Cities Energy Efficiency Partnership

The Orange County Cities Energy Efficiency Partnership Program includes the cities of Huntington Beach, Westminster, Fountain Valley, Costa Mesa, Newport Beach, City of Irvine and the City of Santa Ana as well as SCE and SoCalGas. In addition to identifying and implementing energy efficiency retrofits for municipal facilities, the Partnership also funds community education, marketing, and outreach efforts to create awareness and connect residents and businesses with information and opportunities to take energy actions. The partnership goals also include strategic plan activities, such as climate action planning, updating the Energy Action Plans, code compliance, and reach codes

Partnership activities focus on implementing energy efficiency in municipal facilities specifically, and in the community in whole. The Partnership establishes energy savings goals through energy efficiency retrofit of city-owned facilities, funded by Partnership technical assistance to identify and scope projects and enhanced incentives. The Partnership also funds community education, marketing and outreach efforts to create awareness and connect residents and businesses with information and opportunities to take energy actions. Another key element of the partnership is the strategic plan activities where the city is supported in creating and accomplishing long term sustainability goals in climate action planning, code compliance, reach codes and other strategic plan initiatives.

The Partnership had numerous achievements in 2016. The City of Huntington Beach, for example, established a Green/Sustainable Certification Program, completed all of its LS3 projects, and obtained Platinum status. The City of Newport Beach also obtained Platinum status and conducted an Advanced Meter project. The City of Costa Mesa obtained Silver status.

SCG3751 LGP-SEEC Partnership

The Statewide Energy Efficiency Collaborative (SEEC) is an alliance between the Local Government Commission, Institute for Local Governments, ICLEI for Local Government, PG&E, SDG&E, SCE and SoCalGas. It was established to facilitate action by California cities and counties to reduce greenhouse gas emissions and save energy. The collaborative employs a variety of strategies to catalyze local climate and energy action, including: education and tools for energy efficiency and climate action planning; venues for peer-to-peer networking; technical assistance to implement, track and assess the progress of cities and counties; and support and recognition for local agencies participating in the Beacon Program greenhouse gas emission reduction and utility energy efficiency programs.

The SEEC Partnership had various successes during 2016. The annual SEEC Forum had over 300 participants (the highest level of participation since the forum first started), from 90 unique cities, counties, and regional agencies, representing over 88% of the state's population. The Beacon program added 23 new participants, totaling 100 cities and counties representing more than 30% of California's population. The Beacon Program recognized a record number of cities and counties with awards including 83 Spotlight Awards and 8 full Beacon Awards.

SEEC ClearPath CA, is an energy and emissions calculating, monitoring, and tracking tool. A total of 128 Community and 53 Government Operations inventories were created in 2016 including over 1,000 individual calculations and 83 new US cities are now using ClearPath CA as their GHG inventorying and tracking tool. ClearPath was selected as the official inventory tool for the Compact of Mayors and now supports one-click reporting of summary data to the Carbon Climate Registry (cCR) reporting platform. The Statewide Energy Efficiency Best Practice Coordinator shared 731 best practices, funding opportunities, news highlights, events, and resources to over 900 local government staff and other key stakeholders.

SEEC communications were numerous in 2016, utilizing different avenues to reach stakeholders. The 2016 Climate and Energy Legislative Update highlighted key climate- and energy-related bills passed in the 2016 legislative session including AB-197, AB-1550, AB-2722, SB-32, SB-1000, and other important bills. The SEEC Calendar featured 340 webinars, public workshops, conferences, and other climate- and energy-related events in 2016, providing a single place for local government staff to learn about important events. In addition, a quarterly energy newsletter developed by the Coordinator, Currents, featured articles on 27 timely and relevant topics.

SEEC also provides technical assistance to the member communities. For example, SEEC conducted a demonstration project in the Gateway Cities region to help the region capitalize on the growing interest in sustainable development among local officials, businesses and

community leaders in the region. Throughout 2016, SEEC partners and the Coordinator worked together to provide information via two Cap-and-Trade and a Climate Planning Tools workshop. SEEC partners and the Coordinator also worked with the County of San Mateo to support their ZNE efforts. After numerous targeted calls to learn about the County's resource and technical assistance needs, SEEC developed the online ZNE Hub to create a 'one-stop-shop' for ZNE resources to streamline resource access and research efforts. And finally, the Coordinator conducted over 77 one-on-one calls and meetings with local government staff to provide technical assistance and resource connections.

SCG3752 LGP-Community Energy Partnership

In 2016, the Community Energy Partnership (CEP) continued implementation of the SCE and SoCalGas joint Local Government Partnership focused on achieving energy savings and behavioral change in residential, non-residential, and municipal sectors. The CEP supports local governments in implementing local government items that are identified in the California Long-Term Energy Efficiency Strategic Plan (Strategic Plan).

The Partnership focused on the outreach activities within its member cities. As a result, twelve e-blasts were sent to city and utility partners for education and training. In addition, SoCalGas core programs were promoted at nine outreach events across each of the CEP's cities, except San Bernardino. Evolve Showerhead rebates and Furnace check articles were promoted at these outreach activities. In addition, the Partnership organized in person team leader meetings to encourage Partner-to-Partner dialogues and encouraging/coordinating partner city attendance at Statewide Energy Efficiency Collaborative forum

In 2016, the CEP worked with City and Utility Partners to identify opportunities for municipal therm savings and tracked municipal energy efficiency projects with therm savings potential. The CEP faced challenges, however, due to the limited opportunities for energy efficiency incentives as result of relatively low natural gas loads at municipal facilities. In addition, the City of Corona's delay of their methane reclamation project prevented completion of that project in 2016.

SCG3753 LGP-Desert Cities Partnership

The Desert Cities Energy Partnership Program is a local government partnership comprised of Blythe, Cathedral City, Desert Hot Springs, Indian Wells, Palm Springs, Rancho Mirage, Agua Caliente tribe, La Quinta, Coachella, Indio, SoCalGas, Imperial Irrigation District (IID), and SCE. The program is designed to assist local governments to effectively lead their communities to increase energy efficiency, reduce greenhouse gas emissions, increase renewable energy usage, protect air quality, and ensure that their communities are more livable and sustainable.

This Partnership focuses on installing measurable and persistent energy efficient and conservation devices for the benefit of the cities and their constituencies. Partnership activities specifically target the implementation of energy efficiency measures in municipal facilities. The

Partnership supports city and community energy efficiency efforts through marketing and outreach funds. The Partnership establishes energy savings goals through city-identified projects, funded by partnership incentives and technical assistance.

During 2016, the team met monthly to discuss program goals, milestones, marketing, training, and energy efficiency projects. The meeting location was rotated to different cities to encourage participation from cities that are significantly spread out. The Partnership also held working group meetings quarterly with the cities to discuss their ongoing projects. The annual Energy Summit was held at the Agua Caliente Casino and was well attended. The Partnership exceeded its goals for municipal facilities during 2016.

SCG3754 LGP-Ventura County Partnership

Working in conjunction with SCE and SoCalGas, the Ventura County Regional Energy Alliance (VCREA) continued as the Local Government “implementing partner” for the Ventura County Partnership Program. VCREA works to coordinate efforts among local entities in the region to undertake energy efficiency projects, train public agency staff and consider opportunities for long-term strategic energy efficiency planning as part of the 2013-2016 program cycle. The Partnership Program has been the cornerstone of the VCREA program, providing a strong connection to public agencies and the VCREA mission. VCREA’s mission is to establish Ventura County, its communities and neighboring regions as the leader in developing and implementing durable, sustainable energy initiatives that support sensible growth, healthy environment and economy, enhanced quality of life and greater self-reliance for the region by reducing energy demand and increasing energy efficiency practices.

The Partnership had numerous successes in 2016. Of particular note is the Identification and coordination of leveraged projects leveraged with utility incentives to public agencies. In 2016, the Partnership also saw the addition of new jurisdictions to the partnership, growing to 11 municipal partners. Activities in these jurisdictions included: over 40 community events and presentations; six LED holiday light exchange events, and four trainings including benchmarking, HVAC, Solar, and Title 24. In addition, the Partnership collaborated efforts with multi-family and low income utility programs, Community Action of Ventura County, County Public Health, The Energy Coalition, Community Environmental Council, and South County Energy Efficiency Partnership. The success of the program is evidenced in the 26 awards received by the member cities, including the Beacon Program “Champion of the Year.” The program utilized technical support from both IOUs to assess potential opportunities. Although the program did not produce any municipal gas savings for the year, one large project was completed for which therm savings will be reported in 2017 due to issues with Title 24 regulations.

The Partnership success was in large part related to its ability to engage its member cities as well as other communities and stakeholders. For example, the member cities continued efforts with Climate on the Move, a regional inventory of greenhouse gas emissions. It also conducted offsite partnership meetings through the County so that cities were able to attend and be more engaged. In addition, the Partnership interacted with other LGPs in the region to better share and

implement best practices. These include South Santa Barbara County EE Partnership and other LGPs through the Peer-to-Peer group in SCE and SoCalGas territory. In partnership with Thousand Oaks and City of Ventura, SoCalGas and SCE jointly sponsored local Green Business Certification programs in the County of Ventura. The Statewide Green Business Network has integrated many new features, such as the capacity to integrate technical assistance, utility rebate offerings, collaboration with utilities' Direct Install programs, and conducting in-person verifications to see if the customer is actually implementing the measures. The funding from the utilities allowed the program to add therm saving calculations where Kwh were already being captured as well as the ability to report customer activity, GHG reductions, and EE savings via a dashboard.

While successful on many fronts the Partnership did face challenges in 2016. Data access continued to be an issue that needs to be addressed. Improved alignment is also required between the utility and local government goals for project implementation, planning and financing. In addition, local governments have been challenged in lending support to the program due to consolidated staffing levels and budgetary limitations.

SCG3755 LGP-Local Government Energy Efficiency Pilots

In the Decision for 2013-2014 EE portfolios, the Commission authorized funding to SoCalGas for Local Government Partnerships to pilot new approaches for implementing energy efficiency. This is a non-resource program. All therms are delivered through the SoCalGas core programs. There were no new pilot approaches implemented or funded in 2016.

The South Bay Cities Council of Governments (SBCCOG) introduced a new program in 2014, the Green Buildings Challenge (GBC) program. SBCCOG's Green Buildings Challenge program was launched in September 2015. The GBC program engages local property managers and business tenants to adopt sustainability initiatives. Through friendly competition, participants pursue hard-to-reach goals by taking action on selected activities to achieve measurable energy savings results. With the support of the SBCCOG and the South Bay Environmental Services Center (SBESC), the GBC contacted many local businesses and was able to provide information about energy efficiency programs. SoCalGas is reviewing and validating energy savings, to determine if GBC will continue to be offered or expand the concept to other areas.

SCG3773 LGP-New Partnership Programs

In its Decision for 2013-14 EE portfolios, the Commission authorized funding for the purpose of SoCalGas adding new Local Government Partnerships, subject to the Commission's approval. These new LGP's are intended to promote the core programs as well as making deep energy retrofits a priority in the current program cycle.

Expansion opportunities are to focus closing the gap between partnerships that currently have partnerships with SCE and adopting those partners into SoCalGas LGP program. After careful

consideration of the existing partnerships and potential member cities, no new partnerships were launched in 2016.

SCG3774 LGP-LG Regional Resource Placeholder

In D.12-11-015, the Commission authorized the formation of the Southern California Regional Energy Network (SoCalREN) to implement a portfolio of approved SoCalREN programs as pilots in SCE and SoCalGas service territories, which include SoCalREN’s Energy Upgrade California (EUC) Residential program, Finance program, and Southern California Regional Energy Center (SoCalREC) program for public agencies. In this Program, SoCalGas acts as a Lead Utility in collaboration with SCE to provide overall fiscal oversight and day-to-day contract management of SoCalREN programs. In addition, SoCalGas engages in program coordination with SoCalREN to achieve seamless program offerings and avoid customer confusion.

During 2016, SoCalGas and SoCalREN built on the successful program coordination and leveraging in 2015 to continue the improvement and refinement of the coordination practices. Leveraging the secure bill file delivery system, SoCalGas successfully expanded the authorized customer bill data delivery to additional local governments in South Bay area to provide bill data to Los Angeles County’s Enterprise Energy Management and Information System (EEMIS) to help inform their energy management. The utilities and SoCalREN continue the regular project coordination and communication through various coordinating committees across many programs. Overall, the Program met its objectives for 2016.

SCG3776 LGP-Gateway Cities Partnership

The Gateway Cities Energy Partnership Program (GCELP) is a local government partnership between the Cities of South Gate, Norwalk, Downey, Lakewood and Lynwood (the “Cities” or “Partners”) along with SCE and SoCalGas. The partnership program works to raise energy efficiency awareness, promote long-term energy reduction goals within municipal building stock and coordinates with partner cities to cross promote residential and business utility energy efficiency programs. In addition, the partnership program completes targeted retrofit and retro-commissioning projects in municipal facilities.

Partnership activities focus on addressing energy usage in municipal facilities and in the community. The Partnership places great emphasis on having partners lead their communities by example; by first concentrating on their own municipal facilities. This partnership program provides energy efficiency education, technical assistance, retro-commissioning (RCx) as well as design consultation and energy analysis of new construction and renovation project plans. Analysis of municipal facilities is conducted to identify demand reduction projects with energy conservation measures (ECM) alternatives to optimize the energy and environmental performance of a new building design or extensive retrofit project in each of the targeted cities.

Overall the program objectives were met in 2016. The Partnership provided specialized energy efficiency offerings to participating local governments, residential and business communities. It also informed partners and their communities about the wide variety of energy efficiency and demand reduction offerings by SoCalGas. The Partnership identified opportunities for municipal building retrofits, new construction, commissioning and retro commissioning. And finally, the Partnership provided partners with access to technical assistance to help identify ECMs, define project scopes, estimate project cost, and determine eligible incentives.

The Gateway Cities Partnership continued development of the program infrastructure by conducting regular monthly update meetings with partners throughout 2016. The Partnership also engaged in Marketing, Education and Outreach (ME&O) activities including eleven partner community outreach events in 2016. The Partnership also participated in BOC training educational activities in 2016, resulting in six partner staff members completing classes. The Gateway Cities Energy Partnership is also working to expand and has successfully engaged with the cities of Signal Hill and Whittier to officially join the Partnership. The Partnership team and representatives from each of its partner cities attended the Statewide Energy Efficiency Collaborative Forum in June 2016 for information sharing with statewide partner cities. The Cities of Lakewood and Lynwood have initiated efforts in completing Energy Action Plans that will incorporate goals and objectives for the next couple of years of planned retrofit projects to reduce energy usage at municipal facilities.

SCG3777 LGP-San Gabriel Valley Partnership

The San Gabriel Valley Energy Wise Partnership (SGVEWP) is a collaboration between the San Gabriel Valley Council of Governments (SGVCOG), SCE, and SoCalGas. The primary objectives of the SGVEWP are as follows:

1. Identify opportunities for municipal building energy efficiency retrofits and assist cities in implementing these projects and accessing SCE financial incentives and technical resources;
2. Leverage the SGVCOG's communication infrastructure to inform member agencies about existing SCE energy efficiency, conservation and demand response programs and encourage participation; and
3. Develop specialized energy efficiency offerings to local governments as well as residential and business customers.

Overall the Partnership's program objectives were met. The Partnership held San Gabriel Valley (SGV) training sessions, including annual kick-off update, business energy forum, and benchmarking 101 workshops. Related responsibilities include hosting ten Energy Wise Partnership meetings in SGV cities with SoCalGas and SCE. The Partnership also initiated a winter-preparedness outreach campaign that included social media posts, and newsletter articles. The Partnership was responsible for the creation of a database that contains information on San Gabriel Valley cities' facilities, energy usage and audit information. Other work addressed by the partnership included updating the website, www.sgvenergywise.org, to include recent news and events; coordinating the distribution of information about the Partnership to member

agencies by leveraging existing communication channels, including the COG's committee structure. In 2016, the Partnership was able to develop its work plan for the year. Projects completed during 2016 included a pool heaters and a pool cover.

SCG3778 LGP-City of Santa Ana Partnership

The City of Santa Ana Partnership is a local government partnership comprised of the City of Santa Ana, SoCalGas, and SCE. Partnership activities focus on implementing energy efficiency in municipal facilities specifically and promoting energy efficiency in the community. The partnership establishes energy savings goals for energy efficiency retrofit of city-owned facilities, and identifies, scopes, and implements projects. The partnership also funds community education, marketing, and outreach efforts to create awareness and connect residents and businesses with information and opportunities to take actions to reduce energy consumption, and includes Strategic Plan activities such as climate action planning, code compliance and reach codes development.

The Partnership met its program objectives for 2016. SoCalGas, SCE, and the City met monthly to discuss program goals, milestones for marketing, training, and energy efficiency projects. The City completed a water heater project in 2016 and continues to promote energy efficiency projects with a natural gas vehicle (NGV) station in the project pipeline. The City also featured energy efficiency and other SoCalGas programs in each of its quarterly newsletters. SoCalGas participated in a Party for the Planet event at the Santa Ana Zoo and provided information to attendees to residential and commercial program offerings along with resources and programs available to low income customers.

SCG3779 LGP-West Side Cities Partnership

The Westside Cities Partnership (WSCP) is a SoCalGas Local Government Partnership with the City of Culver City (Culver City) with The Energy Coalition (TEC) as the implementing vendor. TEC also implements the West Side Energy Leader Partnership (WSELP), a Local Government Partnership between SCE and Culver City. Many WSCP program elements are implemented in coordination with the WSELP Programs resulting in economies of scale.

The WSCP's three core program elements are consistent with the SoCalGas Master Program Implementation Plan: Government Facilities, Strategic Plan Activities, and Core Program Coordination, and enhancing the leadership role of Culver City in energy management. WSCP activities in support of this implementation plan included sending twelve Partnership E-blasts to city and utility partners for partner education and training. Other efforts included outreach activities to educate residents about showerheads, furnace checks, and SoCalGas core programs. Non-outreach activities included tracking status of therm-saving projects and assisting City in determining use of SoCalGas City-Directed Budget

Although the WSCP is a non-resource program, it does have annual therm savings targets that are achieved through municipal energy efficiency projects and reported through the SoCalGas

Core programs. The WSCP, however, has found limited opportunities for energy efficiency incentives due to relatively low natural gas loads at municipal facilities. Therm savings were delivered via a Municipal Energy Management System project and the Culver City Plunge boiler replacement.

SCG3780 LGP-City of Simi Valley Partnership

The City of Simi Valley Partnership is a local government partnership between the City of Simi Valley, SoCalGas and SCE. Partnership activities focus on implementing EE in municipal facilities and promoting EE in the community. The partnership establishes energy savings goals for EE retrofit of city-owned facilities, and identifies scopes and implements EE projects.

On December 31, 2015, City of Simi Valley Partnership merged with the Ventura County Regional Energy Alliance (VCREA) Partnership. This consolidation was fully supported by the affected partners. SoCalGas and SCE worked collaboratively to propose a mechanism to consolidate the Simi Valley single city partnership into the larger regional VCREA Partnership. The program was officially closed out in 2016 with the approval of SoCalGas Advice Letter 4991. All remaining operating budget for the City of Simi Valley Partnership was shifted to the SCG3773-New Partnership Program budget.

SCG3781 LGP-City of Redlands Partnership

The Redlands Energy Partnership Program is a local government partnership comprised of the City of Redlands, SCE and SoCalGas. The program is designed to assist the City of Redlands to effectively lead their communities to increase energy efficiency, reduce greenhouse gas emissions, increase renewable energy usage, protect air quality, and ensure that their communities are more livable and sustainable. Partnership activities focus on implementing energy efficiency in municipal facilities specifically and in the community as a whole. The Partnership establishes energy savings goals through City-identified projects, funded by Partnership incentives and technical assistance. The Partnership supports City and community energy efficiency efforts through marketing and outreach funds.

Monthly meetings to discuss potential opportunities were held with Redland's energy champion. To date, however, no projects with the city have been started. There are many potential projects lined up for 2017 that were identified in previous audit reports this includes plans the city has to move forward with two boilers. These replacements will occur in 2017. Outreach events have also been identified for 2017.

The city does not have a significant amount of natural gas savings that can occur from replacement of current equipment. The Redlands Partnership proposed to transition out of a single city partnership at the end of 2016 and to become part of the San Bernardino Regional Energy Efficiency Partnership in 2017.

SCG3782 LGP-City of Beaumont Partnership

The City of Beaumont Energy Partnership is designed to provide integrated technical and financial assistance to help the City of Beaumont effectively lead their community to increase energy efficiency), reduce greenhouse gas emissions, protect air quality, and ensure that their community is more livable and sustainable. The partnership provides performance-based opportunities for the city to demonstrate EE leadership in its communities through energy saving actions, including retrofitting its municipal facilities, as well as providing opportunities for constituents to take action in their homes and businesses.

In late 2015, the City informed SoCalGas and the partner utility, SCE, that due to recent and sudden changes in City leadership, it would not be able to renew its partnership status for 2016. The Partnership was officially closed out with the approval of SoCalGas Advice Letter 4991 in 2016. The remaining 2013-2016 operating budget for this LGP was fund shifted to the SCG3773-New Partnership Program. SoCalGas continues to provide assistance to the City in whatever capacity possible.

SCG3783 LGP-Western Riverside Energy Partnership

The Western Riverside Energy Partnership is a local government partnership comprised of the cities of Calimesa, Canyon Lake, Eastvale, Hemet, Lake Elsinore, Menifee, Murrieta, Norco, Perris, San Jacinto, Temecula, Wildomar, as well as the implementer, Western Riverside Council of Governments (WRCOG), SCE, and SoCalGas. The Partnership delivers energy savings by implementing energy efficiency measures to municipal facilities while concentrating on deep energy retrofits. The Partnership offers marketing education and outreach to local governments and their communities, coordinates with core utility energy efficiency and demand response programs as well as provides Strategic Planning assistance to participating cities. Western Riverside County is a large geographical area in Southern California, generally located east of Orange County, south of San Bernardino County, and north of San Diego County; the WRCOG covers an area of over 2,100 square miles.

The Partnership conducted monthly and quarterly meetings with their partner cities to discuss program goals, milestones for marketing, training, and energy efficiency projects. In addition to these meetings, the Partnership team began working on conducting one-on-one meetings with City staff to further identify the goals that each city wanted to obtain in the Partnership and develop an energy efficiency project pipeline. Through this format, the Partnership was able to further identify the projects of interest and community outreach goals. To meet those goals, the Partnership participated in several City-sponsored events and promoted energy efficiency rebate information and energy savings tips along with signups for SoCalGas' energy efficiency kits and promotion of SCE's LED Lighting Exchange.

The Partnerships also resulted in other successful efforts. For example, SoCalGas assisted SoCalREN and City of Murrieta with a pool heater project which was completed in 2016. The Project was supported through the Regional Energy Network. This was the first Western Riverside Energy Partnership project completed through the SoCalREN. Through the Partnership, SoCalGas' and SCE's Core Energy Savings Assistance (ESA) and Middle Income

Direct Install (MIDI) Program staff worked together to develop a targeted outreach campaign with three Partnership cities to promote the programs through the Partnership. Mailers went out to eligible customers in Hemet, Murrieta, and Temecula. The campaign successfully resulted in an estimated 341 enrollments as a direct result of the campaign.

SCG3801 LGP- North Orange County Cities Partnership

The North Orange County Cities Energy Partnership (NOCC) is a SoCalGas Local Government Partnership focused on achieving energy savings and behavioral change in residential, non-residential, and municipal sectors. The NOCC supports local governments to implement local government actions that are identified in the California Long- Term Energy Efficiency Strategic Plan (Strategic Plan). The NOCC Partnership consists of SoCalGas, the eight cities of Brea, Buena Park, Fullerton, La Habra, La Palma, Orange, Placentia, and Yorba Linda, plus implementing vendor, The Energy Coalition.

The NOCC Partnership worked in several areas during 2016 to build awareness of the opportunities available through the Partnership. It promoted SoCalGas' core programs to residents at outreach events. It also distributed Local Government Partnership e-blasts for Partner education and training. The Partnership played a critical role in developing relationships by facilitating monthly NOCC meetings and coordinating as well as conducting Partnership orientation meetings with partner cities. In addition, it produced energy analysis reports for partner cities and held debriefing calls and meetings.

Although NOCC is a non-resource program as implemented by SoCalGas, it does have annual therm savings targets that will be achieved through municipal energy efficiency projects delivered through SoCalGas core programs. In 2016, the Partnership pursued three audits to identify therm saving measures such as a pool heater and cover project in Buena Park. In general, the Partnership found that there are limited opportunities for energy efficiency audit development due to relatively low natural gas loads at municipal facilities.

SCG3802 LGP- San Bernardino Regional Energy Partnership

The San Bernardino Regional Energy Partnership is a joint partnership with both SoCalGas and SCE with the San Bernardino Association of Governments (SANBAG) as the implementer. The Partnership was approved and added to the Local Government Partnership Program for SoCalGas and SCE in April 2015. The goal of the San Bernardino Regional Energy Partnership is to provide an Energy Efficiency Partnership program to the 14 cities that are not currently participating in other Partnerships with SoCalGas. The Partnership will demonstrate deep energy retrofits, focusing on municipal retrofits in the participating jurisdictions, which include the cities of Chino, Chino Hills, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Rialto, City of Twentynine Palms, Upland, Yucaipa, and Town of Yucca Valley.

The primary objectives for the San Bernardino Regional Energy Partnership include:

- Promote integrated energy efficiency through identifying/assisting in the coordination of opportunities for cost-effective implementation of natural gas and electric energy-savings technologies;
- Coordinate community outreach and training efforts to educate consumers and promote programs; and
- Identify/offer financial packages that bundle practical utility incentives, with various monetary incentives aimed at improving the participation of residents, businesses, and local government agencies.

In its first full year of implementation, the Partnership fell short of its goals but made good progress towards establishing itself as a regional Partnership. The Partnership and its contractor provided technical assistance support during 2016; this included conducting energy audits of facilities in three cities. Examples of the projects identified and implemented in 2016 include a flue gas analysis conducted for boilers in both Chino Hills and the City of Fontana to determine boiler operating efficiencies. Another project completed in 2016 was the replacement of a natural gas boiler in the City of Highland. As a result of these efforts, the Partnership now has a pipeline of energy efficiency projects that will be completed in 2017.

The Partnership conducted monthly and quarterly meetings with their partner cities to discuss program goals, milestones for marketing, training, and EE projects. The Partnership also participated in meetings with the Regional Energy Network to provide an overview of The Energy Networks Programs to the City of Upland, City of Rancho Cucamonga and City of Rialto. Other efforts in the Partnership during 2016 included:

- Each city in the partnership received a kiosk to display SoCalGas core program materials;
- Energy Efficiency Starter Kits were distributed at Holiday Light Exchange events in five cities;
- A new joint partnership overview brochure was created; and
- SoCalGas was represented at the Rialto Pollution Prevention Fair.

Third Party Programs

SCG3757 3P-Small Industrial Facility Upgrades

The Small Industrial Facility Upgrades Program assists industrial customers in becoming more energy efficient and productive through the adoption of EE technologies, including those with low market penetration. The program offers proven EE measures offered in both its calculated and deemed program offerings.

In 2016 the program fully committed the available program budget and received additional budget via a funds shift in late 2016 to allow for additional commitments resulting in a robust pipeline. This success was driven by relationship building and successful project completions with industrial customers. Customers were reached through a variety of methods, including directly at the plant level, through corporate management, account executives, and equipment suppliers.

Due to various challenges at the facility level, project installation and commissioning schedules commonly slip, which caused multiple projects' estimated installation dates to slip into 2017.

SGC3758 3P-Program for Resource Efficiency in Private and Public Schools

The Program for Resource Efficiency in Private and Public Schools, (PREPPS), is intended to reduce gas energy costs, limit greenhouse gas emissions, and improve school district facility operations to enhance the learning environment. The PREPPS targets private learning institutions and public K-12 schools. PREPPS provides school facilities with project opportunity evaluations, energy efficiency recommendations, technical services, and cash incentives.

PREPPS continued to achieve the goal of increasing enrollment of new participants through a balanced mix of deemed and custom measures. The overall satisfactory achievement of energy savings goals for the year will assist the program in building a strong pipeline of enrollments and commitments that is expected to carry into 2017.

PREPPS saw many program successes and barriers in 2016. PREPPS saw an increase in annual savings and an increase in the size of committed projects over previous years. Custom projects accounted for a greater percentage of gross therm savings over previous years. However, due to the complexity of the custom project process, smaller projects not deemed cost-effective, did not move forward. PREPPS continued to enhance vendor relationships, which resulted in the acquisitions of several deemed projects.

SCG3759 3P-On Demand Efficiency

The On-Demand Efficiency Program (ODE) addresses a method of decreasing the natural gas consumption of central domestic hot water systems with recirculation loops in multifamily buildings while maintaining occupant satisfaction with the hot water delivery. Demand controls on hot water recirculation systems turn off the recirculation pump when it is not needed, thereby reducing heat loss from the loop, boiler fire time, and natural gas consumption. This program identifies multifamily properties with central domestic water heating systems and installs on-demand controllers that are feasible for the water heating system.

ODE achieved success on three fronts: nearly doubled 2015 projects installations; an increase in gross therm savings; and an upsurge in customer satisfaction survey scores. Installation quality, improved feasibility analysis, and higher inspection rates were prioritized, resulting in a decrease in performance issues. Customer satisfaction surveys displayed an acceptable response rate and high level of program satisfaction.

During 2016, multiple changes were implemented to improve program success. Marketing outreach was modified to focus on property management companies in order to reach large unit complexes. In addition, the current controller technology was updated for quicker and less evasive installation with the opportunity to accommodate wireless monitoring. Lastly, an

increase to the inspection rate coupled with a higher demanding process, was created to follow up on customer issues.

SCG3760 3P-HERS Rater Training Advancement

The Home Energy Rating System (HERS) Advanced Rater Training Program promotes, develops, and delivers training to certified HERS raters, energy analysts, HVAC technicians, building department officials, other building trade professionals, residential homeowners, and technical students. The participants are involved in new and existing engineering and construction. The curriculums address technical and administrative elements of energy ratings, energy efficiency standards including changes based on updated Title 24 requirements, and industry best practices.

In 2016, Program reach was expanded to include two new organizations: Southwest Carpenter's Union and Community Services and Employment Training (CSET) of Visalia. A total of three new curriculums were developed and three courses were updated during the Program year. New classes created in 2016 included Real Estate Training: Upselling Energy Efficient Homes; Quality Installation: High Efficiency Gas Furnace; and Smart Homes. Updated curriculum included: Combustion Safety; EPA 608 Core & Type II; and Title 24, Part 6: Residential Overview. Despite the challenges of keeping enrollments high during the summer months, class minimum enrollments were met and exceeded. Budget management allowed for additional classes to be held, achieving additional efficiencies that allowed the Program not only to meet but to exceed goals. The Program continued to refine and improve its delivery method to provide strategic and operational support to SoCalGas' WE&T goals and the audience it serves.

For 2016, the Program's production exceeded goal by two classes (67) with an average attendance of almost 20 students per class. This represents an increase of over 3 students per class over 2015. Over 1,300 students attended classes during 2016, resulting in an increase of The total number of students in 2016 increased more than 15% over 2015 and average class attendance increased by 20% from the previous year. Twenty-five different classes were delivered in 2016, in half day and full day formats. In addition, the website was updated to provide new course descriptions and marketing notices.

SCG3761 3P-Multifamily Home Tune-Up

The Multifamily Home Tune-up Program targets owners and managers of multi-unit residential properties. The program provides and installs energy efficient low-flow showerheads and kitchen/bathroom aerators in Orange, San Bernardino, Riverside, and Imperial Counties.

The Program continued measure installations in 2016 by leveraging relationships with other direct install contractors and SoCalGas programs in the service area. By strategically sharing leads and contacts, each contractor added value to their respective program while increasing the value proposition and ease of participation for property managers/owners. Approximately 90

sites and over 8,000 apartment units participated in the program with nearly 25,000 energy efficient devices installed.

Due to the extensive size of the coverage area, it was determined that conducting a program saturation study would better identify underserved areas optimal for conducting program outreach. Starting in the second quarter, the Home Tune-Up program deployed property outreach in specific areas identified as underserved by the Program Manager. As a result, the Home Tune-Up program joined and participated in several Orange County Apartment Association advertising and outreach events which provided additional visibility to both SoCalGas and the Home Tune-Up program. After a relatively successful summer, enrollments started to decline forcing another realignment of the outreach strategy. This consideration includes enrollment of larger property management firms in the underserved areas. Success with this strategy allowed the program to recover monthly installations and savings through the end of the program year.

At the end of 2016 SoCalGas was re-evaluating the long-term program plan as a result of various implementation challenges faced in implementing the program.

SCG3762 3P-Community Language Efficiency Outreach

The Community Language Efficiency Outreach Program (CLEO) is an energy efficiency marketing, outreach, education and training program specifically targeted to the Vietnamese, Indian, Chinese Korean, Hispanic, and African American (VICK-HA) SoCalGas customers. CLEO has a unique, 100% in-language strategy which serves a key role in overcoming the English-as-a-second language market barrier and targets hard-to-reach, low and medium income customers.

The CLEO program markets SoCalGas programs and offers energy efficiency education and training using local ethnic media (radio and newspapers) and community events. The CLEO program's marketing efforts encourage and create participation in SoCalGas energy efficiency programs. CLEO also targets SoCalGas customers in areas with high concentrations of Asian, Hispanic, and African American customers as well as customers in other Southern California Power Producers Association (SCPPA) municipal cities.

In 2016, the CLEO program emphasized working with faith-based and community-based organizations, especially in Hispanic communities. This effort resulted in a participation increase of 250% in the Hispanic community as compared to the previous year.

The CLEO program also continued to reach out to foodservice business customers to educate them on SoCalGas foodservice offerings such as EE programs, rebates, and Energy Resource Center workshops. The CLEO program provided in-language assistance as required for the attendees.

In 2016, CLEO clearly met and exceeded its program goals. CLEO provided 18 in-language seminars, 49 booths, 305 foodservice surveys, 928 EE surveys and 947 EE Kits enrollments. Furthermore, the CLEO program hosted an energy education school program for five schools.

The CLEO program made a few changes in 2016. During the 2016 program year, the program reassigned a portion of the goals to SCPA cities and Southern California Edison (SCE) shared territories due to reprioritization of SCE funding. In addition, radio and newspaper marketing was replaced by more focused in-person marketing.

SCG3763 3P-Multifamily Direct Therm Savings

The Multi-Family Direct Therm Savings Program (marketed as “Energy Smart”) targets owners and managers of multi-unit residential properties. The program encourages participation by providing energy efficient products and installation at no cost to the end-use customer. Marketing activities focus primarily on apartment building owners and managers.

The Energy Smart Program installed nearly 86,000 energy efficient devices at approximately 1,300 sites in 2016. The Energy Smart team provided a high level of customer service, both in the office and in the field, resulting in favorable customer satisfaction surveys. In 2016, the program received an overall satisfaction rating of 9.6 from customers responding to a survey questionnaire generated a third party.

In 2016, the Energy Smart Program delivered the program in hard to reach counties (outside Los Angeles County). At the end of 2016, the program reached 4.3% of hard to reach customers. There were no major challenges or implementation barriers in 2016. The only challenge that the delivery team faced in 2016 was maintaining a full installation schedule. Although 2016 goals were met, it was a continuous struggle throughout the year to find customers to enroll and install. The program faced rejections for various reasons, such as, another contractor had previously retrofitted the site or the customer had collaborated with a contractor that could offer numerous items such as toilets.

SCG3764 3P-LivingWise®

LivingWise® is a school-delivered residential energy savings program that is currently sponsored through collaboration between SoCalGas, SCE, and additional water agencies. The Program provides a proven blend of classroom activities and take-home retrofit and audit projects which students complete as homework assignments with their parents and families. Energy audit data and installation reports are collected via surveys, which are returned to teachers and forwarded to the LivingWise® Program Center for tabulation and storage. LivingWise® is implemented at the sixth grade level to best align with State Learning Standards, and is offered to eligible teachers as an elective (supplemental) program. Teacher enrollment is very high, and overall participant program satisfaction (including parents) is excellent.

The take-home retrofit kit provided to the students included a low-flow showerhead as well as kitchen and bathroom aerators. Whenever SoCalGas was paired with Southern California Edison (SCE) as the co-sponsor the student and teacher educational materials were modified to incorporate the inclusion of a LED (Light Emitting Diode) light bulb.

The 2016 LivingWise program objectives were accomplished including: serving nearly 36,000 sixth grade students, teachers and households; achieving the quarterly distribution goals; and receiving exemplary program ratings in response to the independent research firm customer satisfaction surveys.

SCG3765 3P-Manufactured Mobile Home

The Manufactured Mobile Home Program (MMHP) is designed to provide energy efficient gas measures on a comprehensive basis to manufactured mobile home SoCalGas customers. These energy efficient measures include duct test and seal, kitchen and bathroom faucet aerators, and low flow showerheads.

In 2016, the SoCalGas Manufactured Mobile Home Program provided installations to over 10,400 customers. Quality Assurance surveys were completed for nearly 3,500 customers in 2016 and contractor internal site inspections were completed at over 1,000 customer residences. Positive customer feedback was received from almost 800 customers in 2016. Key Performance Indicators (KPI) Reporting was completed quarterly with scores indicating the program was at or above goal in all evaluated areas.

There were minimal program changes made throughout 2016. For example, effective June 1, 2016, the inspection rate was increased from 5% to 12% based on a statistical analysis of required inspection rates. In order to optimize program efficiency, the program teams, together with SoCalGas program staff, developed and implemented a new internal process that utilized both the marketing and production team customer contact opportunities to gather additional contact information. With this process deployment, program staff were able to provide cost-effective energy savings to SoCalGas customers and decrease access and inspection issues.

SCG3768 3P-California Sustainability Alliance

The California Sustainability Alliance (Alliance) Program is designed to increase and accelerate adoption of energy efficiency by packaging it with complementary sustainability measures (i.e., efficient energy and water use, renewable energy, waste management, and transportation management). In this manner, energy efficiency can be achieved more cost-efficiently, increasing net societal benefits and maximizing benefits to California ratepayers. The scope of the Alliance includes multiple activities dedicated towards: (1) building demand for energy efficiency and environmental sustainability; (2) advancing and promulgating the body of sustainability best practices, tools and techniques; (3) leveraging the collective resources of all partners – public and private, local, state and federal; and (4) developing educational and

outreach materials to widely disseminate the business case for sustainability through the body of emerging and existing best practices.

In 2016, the Alliance program completed two primary projects within the program: Green Buildings and Water Energy. Within the Green Building project, multiple activities were conducted such as; implementation of a student-run design competition geared towards implementing sustainable strategies in the commercial sector; and the design of a potential study which analyzed various measures across diverse building types and California climate zones using building energy simulation software.

Within the Water Energy area, the Alliance program conducted multiple activities which studied the viability of water efficiency in the design of landscapes at medical facilities and conducted a case study exhibiting the potential for water-energy savings while maintaining wellness benefits of the green space. Furthermore, the Alliance program examined the urban agriculture subsector to produce a public case study which examined the opportunities for SoCalGas' future program design.

SCG3769 3P-Portfolio of the Future (PoF)

The Portfolio of the Future (PoF) is aimed at filling the gap between existing technologies in SoCalGas' energy efficiency portfolio and new, emerging technologies. POF seeks to enable the inclusion of emerging natural gas efficiency technologies and new business models to identify candidate natural gas applications in all sectors. This entails identifying, evaluating, and demonstrating new technologies and then working to facilitate their inclusion in SoCalGas' program offerings.

The primary indicator of the PoF program success is the number of new energy efficient technologies that were brought into SoCalGas' energy efficiency portfolio. In 2016, the program was successful in meeting its targets. PoF identified several promising measures - such as Individual Comfort Controls, Integrated Space and Water Heating, and many behavioral measures - and supported SoCalGas in developing programs for several more including Industrial Waste Water Recycling, the Rheem H2AC, Smart Thermostats, Recirculating Pump Time Clock, and a Modulating Gas Dryer Retrofit.

SCG3770 3P-PACE Energy Savings Project

The PACE Energy Savings Project (PACE ESP) is a multi-ethnic outreach program that actively promotes the SoCalGas energy efficiency programs to its residential and small business customers. The program targets customers who belong to the Chinese, Filipino, Korean, Hispanic and, Vietnamese communities living in Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties. PACE ESP conducts its outreach efforts in the native languages of the targeted customer communities to promote better understanding and increased participation in these programs.

In 2016, PACE ESP met and exceeded its target goals and tasks. Program success was attributed directly to the outreach specialists who conveyed the information directly to the community members and participated in community events. Furthermore, PACE specialists conducted seminars and presentations that target community members via outreach activities in their native languages, presented energy efficiency concepts, distributed in language information materials to the target communities, and coordinated with formal and informal leaders of the community.

In 2016, PACE ESP conducted six workshops/ seminars and eight presentations and participated at 62 ethnic community events. As part of these efforts, PACE ESP made contact with over 900 small business customers and roughly 2,700 residential customers. This resulted in over 1,900 completed Ways to Save Energy surveys—formerly known as Home Energy & Water Efficiency Surveys. Lastly, the PACE ESP program enrolled over 2,000 residential customers to receive free EE kits by mail.

SCG3771 3P-Innovative Designs for Energy Efficiency Activities (IDEEA365)

The Innovative Designs for Energy Efficiency Activities 365 (IDEEA365) program provides opportunities for third-party contractors to propose and implement new programs. This EE solicitation process allows for a “continuous” portfolio cycle to encourage new targeted and innovative technologies, program concepts, and offerings without having to wait for a new program cycle to begin.

The program process creates a mechanism for competitive solicitations for third-party programs that may improve cost-effectiveness and helps achieve deeper retrofit savings. The “continuous” solicitation concept is promoted by offering two unique solicitation types, Targeted and Innovative. Targeted Solicitations support utility identified program gaps, market needs, and technologies while Innovative solicitations encourage both existing and new service providers to develop and submit innovative program ideas. With the Innovative process, SoCalGas periodically offers an open Request for Abstracts (RFA) to give the providers of energy efficiency programs the opportunity to present their ideas and concepts for possible funding and implementation. In the Innovative process, upon receipt of abstracts, SoCalGas coordinates program selection and review with internal cross functional groups and an active Peer Review Group (PRG) consisting of program stakeholders to provide advisements. After reviews, scoring, and approval by internal and external stakeholders, the selected abstracts move to a second stage which requires more detailed information. For Targeted programs, the solicitation is done in a single stage with only an RFP. Scoring and selection of proposals is completed in the same way for both Innovative and Targeted solicitations. The selected programs then proceed to contracting, completion of internal and regulatory required documentation, and then funded via fund shift from the available IDEEA365 budget. All bids and communications were posted via the statewide Proposal Evaluation and Program Management Application (PEPMA) website.

During 2016, circumstances driven primarily by legislative requirements required IDEEA365 program activity to be halted while solicitations to meet legislative requirements were executed.

SCG3793 3P-IDEEA365-Instant Rebates! Point of Sale Food Service Equipment

The Instant Rebates! Point-of-Sale Rebate Program (Instant Rebates!) enables nonresidential customers to receive point-of-sale (POS) rebates for eligible, high-efficiency equipment from participating food service equipment vendors. Equipment vendors may receive a sales incentive for eligible high-efficiency food service equipment purchased by a SoCalGas customer. Sales incentives is a mid-stream strategy designed to offset vendors' administrative burden, financial carrying costs of fronting rebates to customers, and overhead associated with stocking and selling more high-efficiency equipment.

In 2016, the Instant Rebates program exceeded the original 2016 program goals. A Customer Satisfaction Study released in early 2016 provided highly favorable ratings of Instant Rebates and the service provided by the Implementer. Instant Rebates exceeded its fourteen-day program payment goal, issuing vendor rebates in an average of eight days from the application approval date. Program Implementer enrolled three new and re-engaged six non-participating vendors to expand the program's geographical coverage. Thirty-three vendor stores are currently enrolled in Instant Rebates.

Instant Rebates conducted custom trainings with one of the largest vendors to address unique sales processes for special order-eligible equipment sales and expanded the program through additional market channels. Instant Rebates presented at two SoCalGas Account Executive meetings and shared information with ten municipal green business/ sustainability program leaders to pass on to their constituents.

SCG3794 3P-IDEEA365-Water Loss Control

The Water Loss Control (WLC) Program provides leak-loss detection and remediation, and pressure management services for water entities. This program was structured to build a customer understanding about the potential embedded energy savings, avoided costs, and cost-effectiveness of leak detection and remediation programs.

Due to various implementation challenges faced by the contractor, the long-term program plan required reevaluation. It was determined that the program not be continued into the 2016 program year and was terminated via Advice Letter 4991.

SCG3795 3P-IDEEA365-Commercial Sustainable Development

The Commercial Sustainable Development Program (CSDP) provides design assistance as well as policy and educational assistance to commercial customers. It focuses on passive and low energy strategies to assist the commercial customer in achieving sustainability, Zero Net Energy (ZNE), and improved thermal comfort. The program deliverables include: white papers; methodologies; metrics; case studies; and workshops on passive design and low energy

strategies. In addition, the program is responsible for funding and coordinating a research grant to support a research assistant working to implement passive design and low energy research strategies.

Due to various implementation challenges faced by the contractor, the long-term program plan required reevaluation. It was determined that the program not be continued into the 2016 program year and was terminated via Advice Letter 4991.

SCG3796 3PP-IDEEA365-On-Demand Efficiency for Campus Housing (ODECH)

The On-Demand Efficiency for Campus Housing Program (ODECH) addresses a method of decreasing the natural gas consumption of central domestic hot water systems with recirculation loops in campus housing buildings while maintaining occupant satisfaction with the hot water delivery. Demand controls on hot water recirculation systems turn off the recirculation pump when it is not needed, thereby reducing unnecessary heat loss from the loop, reducing the boiler fire time, and thus reducing the natural gas consumption. ODECH finds potential sites and installs on-demand controllers that are appropriate for the water heating system, sustainable, save natural gas and electricity and reduce greenhouse gases by burning less natural gas for water heating while maintaining occupant satisfaction with the hot water delivery.

In 2016, the ODECH program exceeded the original goals and with strong initial interest at the beginning of the program year, the program required additional funds to support the strong surge of customer uptake. The ODECH program enjoyed high marks on the program administrator's participant survey. All inspections performed by the program manager's third party inspection group passed. The program experienced very few customer issues and only one in nearly 160 controller installations reported performance issues.

The overall sales approach represented a major change for 2016. The program staff sent out emails monthly which contributed to an increase in program enrollments and overall awareness of the program.

SCG3797 3P-IDEEA365-Energy Advantage Program for Small Business

The Energy Advantage Program (EAP) for Small Business is designed to educate small and medium business customers about energy savings opportunities. To encourage customer installation of energy efficiency projects, EAP helps the customer leverage other SoCalGas rebates and incentives programs.

While the original EAP program was designed to leverage referrals from small business lenders during their active loan process, the Program Administrator discovered that many lenders perceived too much risk with such referrals, causing delays in their loan closures. As such, EAP

continues to educate lenders and build a trusted relationship by providing referrals to lenders and generating referrals from lenders to EAP after a borrower's loan closes. EAP has become a resource for small businesses with sizeable facilities. There is still a significant energy efficiency opportunity, and depending on the needs of the customer, EAP can connect the customer to a variety of additional project financing resources, such as SBA 504 modification, PACE loan, SoCalGas On-Bill Financing (OBF) or other community based lending products.

During 2016, EAP conducted outreach to the targeted regional lender community. In total, EAP engaged with approximately fifteen small business lenders, and enrolled two new lenders as active marketing partners in the program. EAP continued to be active at community events, Valley Economic Alliance events, and presenting at Small Business Administration (SBA) Events. EAP educated 118 customers on the program and benefits. The program successfully enrolled nine small and medium business customers, which included commercial and manufacturing facilities.

SCG3798 3P-IDEEA365-Connect

The Connect Program (Connect) was developed to address the missing information and deployment link within the commercial real estate (CRE) industry. Connect utilizes a portfolio approach to develop long-term energy savings pipelines and establish relationships for both CRE and utility stakeholders. By utilizing existing relationships established with top CRE property management firms, Connect aims to gain the data and building access required to successfully engage the CRE market. In doing so, Connect limits marketing costs and improves the conversion rate of individual building engagements.

The Connect Program focuses on the deployment of gas measures in office, retail, mixed-use, healthcare, and light industrial spaces within SoCalGas' territory. The Program promotes the full suite of existing SoCalGas energy efficiency programs and tracks the completion of customer's energy efficiency projects.

Connect has had significant reach within SoCalGas territory and has benchmarked over 50 properties, totaling over 13.8 million square feet, conducted 10 property audits, covering over 3.6 million square feet and identified 25 energy efficiency measures. Connect added a qualitative component to include conversations regarding past audits, owner receptivity to implementing energy efficiency measures, potential pending sale of the building, and others. Connect has developed an extensive savings pipeline to be pursued for implementation via SoCalGas resource EE programs throughout 2017.

SCG3799 3P-IDEEA365-Historical Building Energy Efficiency

The Historic Building Energy Efficiency Program (HBEEP) is a residential outreach program focused on energy efficient upgrades to historic single-family homes. HBEEP's model is designed to assist homeowners of historic buildings learn how restoration and preservation activities can be combined with energy efficiency upgrades. HBEEP addresses a gap in targeting

a unique building portfolio that includes older single family homes located in designated historic building districts within the SoCalGas service territory. This customer base is typically constrained by specific building alteration guidelines aimed to preserve neighborhoods with distinct architectural and cultural characteristics. The program strategy is to initially target owners/buyers of pre-1940 homes located in designated historic building districts such as the City of Los Angeles' designated Historic Preservation Overlay Zones (HPOZs) and enroll these customers in SoCalGas' energy efficiency rebate and incentive programs (e.g., Home Upgrade/Advanced Home Upgrade Programs).

In 2016, program implementation activities continued based on HBEEP's original program design. Minor changes were implemented to improved efficiencies and reduced administrative burdens. Program implementation activities resulted in the following: seven Home Upgrade participating contractors received training/mentoring specifically in restoration construction and historic preservation. Contractor initiated projects after completing training and mentoring led to 44 energy assessments and 44 Home Upgrade program enrollments. Direct correspondence with customers through homeowner outreach events led to completion of six energy assessments and three Home Upgrade program enrollments.

Though there were no program changes throughout 2016, HBEEP's activity led to increased market understanding and insight into the following program barriers. Many potential customers requested detailed information regarding the incentive process (specifically, the Home Upgrade program incentive process), which is not available through HBEEP. The needs of older historic homes are resource intensive. Another concern identified was the presence of hazardous materials (i.e., possible asbestos containing materials (PACM)) and other health and safety concerns (e.g., knob and tube wiring) which can prevent a comprehensive energy assessment from being conducted, which is necessary to accurately assess the home's energy needs.

SCG3800 3P-IDEEA365-Clear Ice

Clear Ice is a turnkey gas savings energy efficiency program for SoCalGas customers' new and existing ice rinks. It offers a calculated incentive on an industrial vortex technology called REALICE. With this technology, water used for ice making and resurfacing no longer needs to be heated to from 120°F – 160°F and ambient un-heated water at approximately 60°F can be used.

REALICE is a relatively new technology in the United States and there is a need to conduct targeted and repeated communications to each rink's decision makers including both rink operators and rink owners. One key market barrier is to modify an entrenched behavior by the rink operators whose normal practice is to use heated water heated for ice resurfacing. To modify this behavior, a technical description of how and why the technology works, total savings, and other program adopters are just some of the talking points presented to the rink owners and operators.

Currently, only one customer has installed this technology one customer has committed to installation (pending incentive approval), and another has agreed to test the technology.

Additional customers have indicated an interest in the technology based on the return on investment, combined incentives and the increasing program uptake. Program staff will continue to pursue potential cliental, present ongoing customer training, develop marketing materials and conduct outreach presentations to all rinks in the SoCalGas service territory.

SCG3804 3P-IDEEA365-On-Premise Ozone Laundry (OPOL)

The On-Premise Ozone Laundry (OPOL) Program targets small to medium sized hotels, fitness centers, and health centers (including nursing homes, convalescent homes, hospices and hospitals) with 250 or fewer rooms that have an on-premise laundry operation. The program installs ozone laundry technology in customer's on-premise laundry facility. Ozone technology is effective in cold water, thereby reducing gas and electricity consumption by eliminating nearly all hot water wash cycle requirements.

The OPOL program launched in 2016. The OPOL Program marketing strategies, infrastructure, and staff resulted in a steady increase in program performance levels. The program team, working with the SoCalGas staff, constantly refined system processes to maximize program availability in the hard to reach sector.

The OPOL Program has fluidly introduced and educated the targeted sector to the newly implemented technology. Customer interest, willingness to participate and program enrollment have steadily increased throughout the implementation period. Post installation maintenance and service visits have reassured program participant satisfaction as well as the continued use of the technology.

Water Energy Nexus

SoCalGas has long been an active contributor in the water-energy proceeding since its inception. Spanning across five of the six legislative umbrellas that guide the State's goals in energy, emissions reductions, and sustainability, SoCalGas has maintained its role as a water advocate. In 2016, SoCalGas has continued in its offering of programs that educate on water savings, deliver energy savings measures associated with the savings of hot water, as well as partnering with water agencies for cross-promotion. Based on the evolution of Water Energy Nexus proceeding activities, SoCalGas had begun new research and study efforts to better quantify and deliver energy savings through water and will be continuing these activities throughout 2017. SoCalGas works jointly with the other investor owned utilities (IOUs) and stakeholders in planning toward the improvement of tools and protocols regarding water energy and expects these activities to continue through 2017 and beyond.

Water Energy Nexus Cost Calculator

On February 10, 2016, the Commission requested comments on changes to Water-Energy Avoided Cost Tools via the CPUC's Water-Energy Nexus Programs Rulemaking [OIR 13.12.011]. In the ruling, the Commission cited Decision (D.) 15-09-023 adopting the Water-

Energy (W-E) Calculator that stated “The most pressing substantive change we would like to see for the tools is the addition of default gas energy intensity values to the W-E calculator.” During the course of multiple workshops that were conducted during 2014-2015 to obtain input into the design and default assumptions proposed to be used in the CPUC’s Water-Energy Calculator, SoCalGas and other parties noted the omission of natural gas. The consequence of this omission is that presently, although Ordering Paragraph 2 in D.15-09-023 directs that “Energy efficiency Program Administrators shall use the Water-Energy Calculator and the Avoided Water Capacity Cost Model in preparing their requests for ratepayer funding for measures/programs that reduce water use and thus save embedded energy”, any water-energy nexus program conducted by a gas utility is deemed to have a natural gas energy intensity of zero.

The Commission’s W-E Calculator currently utilizes a default value of zero for gas intensity and does not calculate embedded energy savings for natural gas. Per the direction given by the Commission to Energy Efficiency Program Administrators to utilize the W-E Calculator, SoCalGas in 2016 began work on a study to determine the appropriate value to represent the natural gas energy intensity of water in the CPUC’s W-E Calculator within SoCalGas’ service area. In the third quarter of 2016, SoCalGas identified which water agency operate natural gas engines for water transportation and also what the water agencies estimated water and energy values from 2010-2015. As D.16-12-047 provided additional direction for the W-E Calculator to be integrated with the E3 Energy Efficiency Cost Calculator (Water Energy Nexus Cost Calculator 2.0), SoCalGas will continue this effort in 2017 to establish the background in which SoCalGas can calculate the water energy intensity value for its service territory in 2017 onward incorporated as part of the Water Energy Nexus Action plan due six month after the natural gas study is complete or August 2017, whichever comes first.

California Sustainability Alliance

In 2016, the California Sustainability Alliance, a SoCalGas 3rd Party Program, completed a guidebook to understand opportunities for water and energy savings associated with landscape design. The guidebook is tailored to the medical industry to assuage concerns this industry has with outdoor landscapes. In this guidebook, the California Sustainability Alliance discovered that water efficient landscape design can have substantial direct and possibly embedded energy savings, cost savings, and maintenance benefits.

Shared Network Advanced Meter Infrastructure Pilots

SoCalGas, along with the other Energy IOUs in California, were asked to develop pilot proposals to identify technical issues with a water corporation “piggybacking” on electric corporation and/or gas corporation Advanced Metering Infrastructure (AMI), or to structure new pilots to explore different questions if pilots on AMI were already underway. As part of this effort, SoCalGas submitted a proposal which, in addition to network sharing, includes the identification and evaluation of potential hot water leaks based on analytics of both gas and water AMI data, as well a study of the potential benefits associated with hot water leak detection and resolution. This proposal was approved by the CPUC on June 9, 2016 with D.16-

06-010, and SoCalGas has begun work with Aclara Technologies (advanced meter vendor), Valor Water Analytics, (3rd party analytics vendor), and two separate Commission-regulated water utilities (San Gabriel Valley Water Company, California American Water) on this effort, referred to as the Water Energy Nexus (WEN) AMI Pilots.

The WEN Shared AMI Pilots have been driving to achieve the following program goals set forth in the pilot: (1) network piggybacking, (2) Combined utility data analytics for hot water leak detection, and (3) Determining energy savings from reduced water loss. The first goal has been met in 2016, as both WEN Shared AMI Pilots participants have deployed their pilot water MTUs and are successfully transmitting data over the SoCalGas AMI Network. The WEN Shared AMI Pilots have begun work on Goals 2 and 3 and will continue to these efforts in 2017.

Water Utility Partnering Activities

SoCalGas currently has several water-energy nexus activities and partnerships.

In 2016, SoCalGas continued its partnership with Los Angeles Water and Power (LADWP) and Los Angeles Metropolitan Water District (MWD) to co-deliver water energy nexus activities. SoCalGas and MWD alongside the U.S. Bureau of Reclamation (USBR), Environmental Protection Agency (EPA), Southern Nevada Water Authority (SNWA), the Central Arizona Project (CAP), SoCalGas and Western Resource Advocates funded research to document water energy saving ideas and strategies. SoCalGas also continued its Energy Smart Landscape seminars that was co-taught with MWD in 2016. The LADWP/SoCalGas water energy nexus partnership continued its successful achievements through its direct install activities, one such activity installed various water energy measures in over 31,000 multi-family units.

SoCalGas continued its LivingWise® residential energy education and savings program. LivingWise® is a school-delivered residential program that during 2016 was sponsored through collaboration between SoCalGas, Southern California Edison (SCE), and 12 different California municipalities or water agencies. The 2016 LivingWise® program involved sixth grade students, teachers and households reaching over 35,000 households to install and educate water energy activities.

Other Water Energy Related Program Activities

In 2016, SoCalGas offered multiple energy efficiency measures that can achieve direct water savings to residential and non-residential customers. These measures are listed in the table below:

EE Program Sector	Measures Offered that Achieve Direct Water Savings
Residential	Auto-Diverting Tub Spout with Thermostatic Shut-off Valve
	High Efficiency Clothes Washer
	Low Flow Showerhead
	Residential Faucet Aerator
	Thermostatic Shower Valve

	Water Savings Kit
Non-Residential	Gas Combination Oven
	Gas Pressureless Steamer
	Laminar Flow Restrictor
	Low Flow Pre-Rinse Spray Valve
	Ozone Laundry

SoCalGas plans to expand its offer of EE measures which can achieve direct water savings to residential and non-residential customers in 2017 through the development of new deemed EE savings measure workpapers.

Budget

Program expenditures are not broken out by measure or by water energy related activities and rather are included in the overall expenditures listed in Appendix B.1, Updated Monthly Report, for the following programs listed below:

Program
SCG3702 SW-CALS-Plug Load and Appliance
SCG3703 SW-CALS-Plug Load and Appliances - POS
SCG3705D SW-CALS-EUCa MIDI
SCG3707 SW-CALS-RNC
SCG3711 SW-COM-Deemed Incentives
SCG3761 3P-MF Home Tune Up
SCG3763 3P-MF Direct Therm Savings
SCG3764 3P-Livingwise
SCG3765 3P-Manufactured Mobile Home
SCG3793 3P-IDEEA365-Instant Rebates!
SCG3805 SW-COM-Direct Install Program
SCG3806 AMI Water Pilot

SECTION 1 ENERGY SAVINGS

The purpose of this table is to report the annual impacts of the Energy Efficiency portfolio of programs implemented by SoCalGas for the 2016 year. The annual impacts are reported for 2016 in terms of annual and lifecycle energy savings in natural gas savings in MMTh (million therms). The report shows annual savings (Installed Savings) that reflect installed savings, not including commitments. The values in the Installed Savings column include savings from the Low-Income Energy Efficiency Program, and Codes and Standards work (LIEE and C&S savings are broken out as separate line items in Table 6 - Savings by End-Use).

Table 1

Table 1:			
<i>Electricity and Natural Gas Savings and Demand Reduction (Gross)</i>			
Annual Results	2016 Installed Savings [1]	CPUC 2016 Adopted Goals (D.15-10-028)	% of Goals (2016)
<i>2016 Energy Savings (GWh) – Annual</i>	8.7		
<i>2013-2016 Energy Savings (GWh) - Annual</i>	37.2		
<i>2016 Energy Savings (GWh) – Lifecycle</i>	100		
<i>2013-2016 Energy Savings (GWh) - Lifecycle</i>	471		
<i>2016 Natural Gas Savings (MMth) – Annual [2]</i>	36.2	29.1	124%
<i>2013-2016 Natural Gas Savings (MMth) - Annual [2]</i>	114.7	101.7	113%
PG&E			
SCE			
SDG&E			
SCG	36.1	29.1	124%
MCE			
BayREN			
SoCalREN	0.1		
TOTAL Natural Gas Savings (MMth) – Annual	36.2	29.1	124%
<i>2016 Natural Gas Savings (MMth) – Lifecycle [3]</i>	170		
<i>2013-2016 Natural Gas Savings (MMth) - Lifecycle [3][4]</i>	884		
<i>2016 Peak Demand Savings (MW)</i>	5.2		
<i>2013-2016 Peak Demand Savings (MW)</i>	18.2		

[1] Results from activity installed in 2016.

[2] Includes savings associated with Low Income Energy Efficiency and Codes and Standards programs.

[3] Does not include lifecycle savings associated with SoCalREN and Codes & Standards programs for 2016.

[4] Does not include lifecycle savings associated with SoCalREN, Low Income Energy Efficiency, and Codes and Standards programs for 2013, 2014, and 2015.

SECTION 2 EMISSION REDUCTIONS

The purpose of this table is to report the annual incremental environmental impacts of the Energy Efficiency portfolio (for both electricity and natural gas) of programs implemented by SoCalGas during the 2016 program year. Parties agreed that the impacts should be in terms of annual and lifecycle tons of CO₂, NO_x, SO_x, and PM₁₀ avoided and should come from the E3 calculator.

Table 2

Table 2: <i>Environmental Impacts (Gross)</i>								
Annual Results	Annual tons of CO2 avoided	Lifecycle tons of CO2 avoided	Annual tons of NOx avoided	Lifecycle tons of NOx avoided	Annual tons of SOx avoided^[1]	Lifecycle tons of SOx avoided^[1]	Annual tons of PM10 avoided	Lifecycle tons of PM10 avoided
<i>2016 Portfolio Targets [2]</i>								
2016 Total [3]	359,780	4,819,325	559,098	7,502,209	-	-	663	7,599
2013-2016 Total [4]	880,901	12,503,571	1,297,121	18,389,729	-	-	3,607	45,843

[1] The avoided SOX reductions are not calculated in the cost effectiveness tool (CET). It was determined that none of the IOUs uses coal power on the margin and the energy efficiency savings have impact on the margin only.

[2] SoCalGas' Compliance Advice Letter 4449-G, 4449-G-A, and 4449-G-B, filed January 13, 2013, April 23, 2013, and May 29, 2013, respectively and approved by the Commission on June 12, 2013 established SoCalGas' gas emission reduction targets for the 2013-2014 program cycle. SoCalGas' Compliance Advice Letter 4725 approved by the Commission on January 26, 2015 established SoCalGas' gas emission reduction target for the 2015 program year. SoCalGas did not file a compliance filing for 2016 and does not have portfolio targets assigned for 2016.

[3] Results from activity installed in 2016 only.

[4] Results from activity installed in 2013, 2014, 2015, & 2016.

[5] Environmental impacts do not include any impacts associated with SoCalREN or Low Income Energy Efficiency programs.

SECTION 3 EXPENDITURES

The purpose of this table is to report the annual costs expended by SoCalGas in implementing the 2016 Energy Efficiency portfolio. The report is broken out into the Administrative Costs, Marketing/Education/Outreach Costs, and Direct Implementation Costs categories for the following program classifications: 1. IOU Programs, 2. Local Government Programs (Partnership Programs), 3. Third Party Programs (Competitive Bid Program), and 4. EM&V reported for IOU and Joint Staff individually. The next set of expenditures represents budget and expenditure dollars outside of portfolio: 1. SW ME&O, 2. OBF/Revolving Loan Pool, and 3. Energy Savings and Assistance Program (ESA).

Table 3

Table 3:
2016 Expenditures, including expenditures on past cycle commitments paid in 2016

2016 Expenditures	Administrative Cost									
	Non-IOU Implementer					IOU Support				
	10-12 Committed Funds Expenditures	10-12 Committed Funds 2013-2016 Expenditures	13-15 Committed Funds Expenditures	2016 Expenditures from 2016 Budget	2013-2016 Total Expenditures	10-12 Committed Funds Expenditures	10-12 Committed Funds 2013-2016 Expenditures	13-15 Committed Funds Expenditures	2016 Expenditures from 2016 Budget	2013-2016 Total Expenditures
IOU Programs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,419,622	\$ 21,093,174
Local Government Programs (Partnership Programs)	\$ -	\$ -	\$ -	\$ 149,210	\$ 556,214	\$ -	\$ -	\$ -	\$ 629,800	\$ 2,710,438
Third Party Programs (Competitive Bid Program) [1]	\$ -	\$ -	\$ -	\$ 958,190	\$ 3,344,421	\$ -	\$ -	\$ -	\$ 405,248	\$ 1,448,989
RENs & CCA (Non-IOU Programs) [4][5]	\$ -	\$ -	\$ -	\$ (2,363,924)	\$ (1,527,460)	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal	\$ -	\$ -	\$ -	\$ (1,256,523)	\$ 2,373,175	\$ -	\$ -	\$ -	\$ 6,454,671	\$ 25,252,601
EM&V - IOU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 778,893	\$ 2,108,013
EM&V - Joint Staff	\$ -	\$ -	\$ -	\$ 2,481,780	\$ 4,429,816	\$ -	\$ -	\$ -	\$ -	\$ -
Total Portfolio	\$ -	\$ -	\$ -	\$ 1,225,257	\$ 6,802,991	\$ -	\$ -	\$ -	\$ 7,233,564	\$ 27,360,613
SW ME&O [2]*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,520	\$ 47,430
OBF/Revolving Loan Pool*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Energy Savings Assistance Program (ESA)*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenditures	\$ -	\$ -	\$ -	\$ 1,225,257	\$ 6,802,991	\$ -	\$ -	\$ -	\$ 7,242,084	\$ 27,408,044

*Budget dollars outside Portfolio Total

Table 3:
2016 Expenditures, including expenditures on past cycle commitments paid in 2016

2016 Expenditures	Direct Implementation Non-Incentive					Direct Implementation Incentives & Rebates				
	10-12 Committed Funds Expenditures	10-12 Committed Funds 2013-2016 Expenditures	13-15 Committed Funds Expenditures	2016 Expenditures from 2016 Budget	2013-2016 Total Expenditures	10-12 Committed Funds Expenditures	10-12 Committed Funds 2013-2016 Expenditures	13-15 Committed Funds Expenditures	2016 Expenditures from 2016 Budget	2013-2016 Total Expenditures
	IOU Programs	\$ 516,498	\$ 11,531,132	\$ -	\$ 22,728,734	\$ 82,728,707	\$ -	\$ -	\$ -	\$ 21,288,481
Local Government Programs (Partnership Programs)	\$ -	\$ 49,648	\$ -	\$ 1,729,683	\$ 6,296,845	\$ -	\$ -	\$ -	\$ -	\$ 3,523
Third Party Programs (Competitive Bid Program) [1]	\$ -	\$ 770,967	\$ -	\$ 8,110,632	\$ 26,430,563	\$ -	\$ -	\$ -	\$ 7,348,171	\$ 25,199,782
RENs & CCA (Non-IOU Programs) [4][5]	\$ -	\$ -	\$ -	\$ 5,495,688	\$ 4,688,846	\$ -	\$ -	\$ -	\$ 3,500,000	\$ 5,275,000
Subtotal	\$ 516,498	\$ 12,351,747	\$ -	\$ 38,064,737	\$ 120,144,960	\$ -	\$ -	\$ -	\$ 32,136,651	\$ 95,428,602
EM&V - IOU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
EM&V - Joint Staff	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Portfolio	\$ 516,498	\$ 12,351,747	\$ -	\$ 38,064,737	\$ 120,144,960	\$ -	\$ -	\$ -	\$ 32,136,651	\$ 95,428,602
SW ME&O [2]*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OBF/Revolving Loan Pool*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 193,671	\$ 1,410,993
Energy Savings Assistance Program (ESA)*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenditures	\$ 516,498	\$ 12,351,747	\$ -	\$ 38,064,737	\$ 120,144,960	\$ -	\$ -	\$ -	\$ 32,330,322	\$ 96,839,595

*Budget dollars outside Portfolio Total

Table 3:
2016 Expenditures, including expenditures on past cycle commitments paid in 2016

2016 Expenditures	PA Administered ME&O (outside the SW ME&O activities)					Adopted 2016 Budget (Decision 14-10-046)	Operating 2013-2016 Budget (Decision 14-10-046)
	10-12 Committed Funds Expenditures	10-12 Committed Funds 2013-2016 Expenditures	13-15 Committed Funds Expenditures	2016 Expenditures from 2016 Budget	2013-2016 Total Expenditures		
	IOU Programs	\$ -	\$ -	\$ -	\$ 3,058,893		
Local Government Programs (Partnership Programs)	\$ -	\$ -	\$ -	\$ 253,189	\$ 1,052,955	\$ 4,845,951	\$ 19,217,336
Third Party Programs (Competitive Bid Program) [1]	\$ -	\$ -	\$ -	\$ 767,690	\$ 2,549,948	\$ 16,375,717	\$ 66,549,984
RENs & CCA (Non-IOU Programs) [4][5]	\$ -	\$ -	\$ -	\$ 94,888	\$ 1,135,911	\$ 4,337,000	\$ 17,501,161
Subtotal	\$ -	\$ -	\$ -	\$ 4,174,661	\$ 18,652,007	\$ 80,355,572	\$ 331,916,135
EM&V - IOU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 920,680	\$ 3,849,307
EM&V - Joint Staff	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,427,247	\$ 10,148,172
Total Portfolio	\$ -	\$ -	\$ -	\$ 4,174,661	\$ 18,652,007	\$ 83,703,499	\$ 345,913,613
SW ME&O [2]*	\$ -	\$ -	\$ -	\$ 2,175,674	\$ 5,683,159	\$ 2,436,603	\$ 6,440,669
OBF/Revolving Loan Pool*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Energy Savings Assistance Program (ESA)*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenditures	\$ -	\$ -	\$ -	\$ 6,350,334	\$ 24,335,167	\$ 86,140,102	\$ 352,354,283

*Budget dollars outside Portfolio Total

[1] Does not include those competitively bid programs that are components of Statewide programs.
 [2] D.15-09-033 authorized bridge funding for the 2016 SW ME&O annual budget. SCG3733 SW-ME&O-ME&O was adjusted based on levels set in D.16-09-020.
 [3] SoCalGas' Compliance Advice Letter 4449-G, 4449-G-A, and 4449-G-B, filed January 13, 2013, April 23, 2013, and May 29, 2013, respectively and approved by the Commission on June 12, 2013 contained SoCalGas' annual budgets for the 2013-2014 program cycle. Advice Letter 4725 filed December 15, 2014 and approved by the Commission January 26, 2015 contained annual budgets for 2015. D.15-10-028 authorized annual budgets for 2016 based on 2015 funding levels provided in D.14-10-046.
 [4] Includes budget and expenditures associated with SoCalREN.
 [5] The SoCalRen - Finance Program budget reflects a reduction of \$225,000 from the originally authorized budget, per D.13-09-044, OP 23.

SECTION 4 COST-EFFECTIVENESS

The purpose of this table is to provide an annual update on the cost-effectiveness of the portfolio of programs being implemented in the 2016 program year. The targets above are at the portfolio level, so an annual average is used in order to compare the current annual estimates of cost-effectiveness with the cost-effectiveness levels that were estimated at the time the portfolios were adopted. The report includes the SoCalGas results and goals.

Table 4

Annual Results	Total Cost to Billpayers (TRC)	Total Savings to Billpayers (TRC)	Net Benefits to Billpayers (TRC)	TRC Ratio	Total PAC Cost	PAC Ratio	PAC Cost per kW Saved (\$/kW)	PAC Cost per kWh Saved (\$/kWh)	PAC Cost per therm Saved (\$/therm)
<i>2016 Portfolio Targets [1]</i>							N/A	N/A	
2016 Total [2][7][8][9]	\$ 193,024,347	\$ 288,667,015	\$ 95,642,668	1.50	\$ 77,196,027	3.74	N/A	N/A	\$ 0.31
2013-2016 Total [3][4][5][6][7]	\$ 538,402,132	\$ 703,383,845	\$ 164,981,712	1.31	\$ 264,365,333	2.66	N/A	N/A	\$ 0.31

[1] SoCalGas' Compliance Advice Letter 4449-G, 4449-G-A, and 4449-G-B, filed January 13, 2013, April 23, 2013, and May 29, 2013, respectively and approved by the Commission on June 12, 2013 established the cost-effectiveness of SoCalGas' 2013-2014 portfolio. SoCalGas' Compliance Advice Letter 4725 approved by the Commission on January 26, 2015 established the cost-effectiveness of SoCalGas' 2015 program year. SoCalGas did not file a compliance filing for 2016 and does not have portfolio targets assigned for 2016.

[2] Results from activity installed in 2016 only.

[3] Results from activity installed in 2013, 2014, 2015, & 2016.

[4] Includes SoCalGas' 2013 shareholder incentive payment of \$3,075,647, submitted in AL 4542 and approved by the Commission on December 11, 2013.

[5] Includes SoCalGas' 2014 shareholder incentive payment of \$5,824,913, submitted in AL 4661 and approved by the Commission on December 18, 2014.

[6] Includes SoCalGas' 2015 shareholder incentive payment of \$4,153,869, submitted in AL 4826 & AL 4859 and approved by the Commission on December 3, 2015.

[7] Includes SoCalGas' 2016 shareholder incentive payment of \$3,538,297, submitted in AL 5024 and approved by the Commission on December 15, 2016.

[8] Does not include costs and benefits associated with Low Income Energy Efficiency, Emerging Technologies Programs, and SoCalREN.

[9] 2016 Cost-Effectiveness calculations exclude \$1,392,176.77 of cost incurred for activities that will be claimed in 2017.

SECTION 5 BILL PAYER IMPACTS

The purpose of this table is to report the annual impact of the energy efficiency activities on customer bills relative to the level without the energy efficiency programs, as required by Rule X.3 of the Energy Efficiency Policy Manual version 3, adopted in D.05-04-051.

Table 5

Table 5:				
<i>Ratepayer Impacts</i>				
2016	Electric Average Rate (Res and Non-Res) \$/kwh	Gas Average Rate (Core and Non-Core) \$/therm	Average First Year Bill Savings (\$)	Average Lifecycle Bill Savings (\$)
SCG	N/A	\$1.10	\$ 39,458,588	\$ 180,698,841

[1] SoCalGas' 12-month residential weighted average transportation rate for 2016 is \$0.79674 per therm.

[2] SoCalGas' 12-month average procurement rate in 2016 was \$0.29965.

[3] Ratepayer impacts are derived from 2016 gross savings accomplishments and the average rate.

[4] The average First Year Bill Savings are calculated by the 2016 first year savings multiplied by the Gas Average Rate.

[5] The average Lifecycle Bill Savings are calculated by the 2016 lifecycle savings multiplied by the Gas Average Rate.

SECTION 6 SAVINGS BY END-USE

The purpose of this table is to show annual portfolio savings by Residential and Non-Residential end-uses and those savings attributable to the LIEE program, and Codes and Standards work

Table 6

Table 6:						
<i>Annual Savings By End-Use 2016 Only</i>						
	GWH	% of Total	MW	% of Total	MMTh	% of Total
Residential	8.40	97%	5.16	100%	4.01	11%
Appliances	2.19	25%	0.91	18%	0.31	1%
Consumer Electronics	-	0%	-	0%	-	0%
Cooking Appliances	-	0%	-	0%	-	0%
HVAC	2.14	25%	1.80	35%	0.36	1%
Lighting	-	0%	-	0%	-	0%
Pool Pump	-	0%	-	0%	0.00	0%
Refrigeration	-	0%	-	0%	-	0%
Water Heating	0.49	6%	0.05	1%	2.08	6%
Other	3.58	41%	2.40	46%	1.24	3%
Nonresidential	0.29	3%	0.01	0%	11.34	31%
HVAC	(0.03)	0%	-	0%	0.44	1%
Lighting	-	0%	-	0%	-	0%
Office	-	0%	-	0%	-	0%
Process	-	0%	-	0%	4.68	13%
Refrigeration	-	0%	-	0%	0.09	0%
Water Heating	0.10	1%	0.01	0%	1.32	4%
Other	0.22	3%	-	0%	4.81	13%
Low Income Energy Efficiency	-	0%	-	0%	1.15	3%
Codes & Standards Energy Savings	-	0%	-	0%	19.69	54%
SCG ANNUAL PORTFOLIO SAVINGS	8.69	100%	5.17	100%	36.19	100%

[1] Results from activity installed in 2016 only.

[2] Includes savings associated with SoCalREN.

SECTION 7 COMMITMENTS

The purpose of this table is to allow the utilities to report commitments which will be produced within the 2017 program year (commitments entered into during the previous and current program cycle but which are not expected to produce installed savings until after December 2016). This information will be useful for the Commission's resource planning purposes by enabling program activities to be linked to a particular funding cycle.

Table 7

Table 7:				
<i>Commitments</i>				
Commitments Made in the Past with Expected Implementation after December 2010-2012				
	Committed Funds [1]	Expected Energy Savings		
2010-2012 [1]	\$	GWH	MW	MMth
SCG Total	\$ 671,982	0	0	2.32
Commitments Made in the Past Year with Expected Implementation after December 2015				
	Committed Funds	Expected Energy Savings		
2013-2015	\$	GWH	MW	MMth
SCG Total				
Commitments Made in the Past Year with Expected Implementation after December 2016				
	Committed Funds [2]	Expected Energy Savings		
2013-2016 [2]	\$	GWH	MW	MMth
SCG Total	\$ 7,724,157	0	0	8.65

[1] Committed funds are associated with the 2010-2012 program cycle as of 12/31/2016.

[2] Committed funds are associated with the 2013-2016 program cycle as of 12/31/2016.

[3] Committed funds represent incentive amounts only.

SECTION 8

SHAREHOLDER PERFORMANCE INCENTIVES

In 2016, the Commission awarded SoCalGas an earnings amount of \$3.54 million, calculated from the results of the 2014 and 2015 program period.

In accordance with the reporting schedule as adopted in D.13-09-023 dated September 5, 2013 and modified by D.15-10-028 Appendix 5 dated October 28, 2015, current values for the 2016 Efficiency Savings and Performance Incentives (ESPI) have not yet been submitted by the IOUs.

The IOUs will file their respective ESPI advice letters on September 1 of this year. The first ESPI awards claims are expected to be approved by the Commission no later than December 31 of this year. The second 2016 ESPI awards claims will be submitted for approval to the Commission on September 1 of the following year. Therefore, there is no information on earnings presented in this report for the 2016 period.

Appendix A – SoCalGas Program Numbers

Program ID	Program Name	Date Added (new programs)	Date Removed
SCG3701	SW-CALS-Energy Advisor		
SCG3702	SW-CALS-Plug Load and Appliances		
SCG3703	SW-CALS-Plug Load and Appliances - POS		
SCG3704	SW-CALS-MFEER		
SCG3705	SW-CALS-Energy Upgrade California Home Upgrade Program		
SCG3706	SW-CALS-Residential HVAC		
SCG3707	SW-CALS-RNC		
SCG3708	SW-COM-Energy Advisor		
SCG3709	SW-COM-CEI		
SCG3710	SW-COM-Calculated Incentives		
SCG3711	SW-COM-Deemed Incentives		
SCG3712	SW-COM-NonRes HVAC		
SCG3713	SW-IND-Energy Advisor		
SCG3714	SW-IND-CEI		
SCG3715	SW-IND-Calculated Incentives		
SCG3716	SW-IND-Deemed Incentives		
SCG3717	SW-AG-Energy Advisor		
SCG3718	SW-AG-CEI		
SCG3719	SW-AG-Calculated Incentives		
SCG3720	SW-AG-Deemed Incentives		
SCG3721	SW-ET-Technology Development Support		
SCG3722	SW-ET-Technology Assessment Support		
SCG3723	SW-ET-Technology Introduction Support		
SCG3724	SW C&S-Building Codes & Compliance Advocacy		
SCG3725	SW C&S-Appliance Standards Advocacy		
SCG3726	SW C&S-Compliance Enhancement		
SCG3727	SW C&S-Reach Codes		
SCG3728	SW C&S-Planning Coordination		
SCG3729	SW-WE&T-Centergies		
SCG3730	SW-WE&T-Connections		
SCG3731	SW-WE&T-Strategic Planning		
SCG3734	SW-IDSM-IDSM		
SCG3735	SW-FIN-On-Bill Financing		
SCG3736	SW-FIN-ARRA-Originated Financing		
SCG3737	SW-FIN-New Financing Offerings		
SCG3738	LInstP-CA Department of Corrections Partnership		
SCG3739	LInstP-California Community College Partnership		
SCG3740	LInstP-UC/CSU/IOU Partnership		
SCG3741	LInstP-State of CA/IOU Partnership		
SCG3742	LGP-LA Co Partnership		
SCG3743	LGP-Kern Co Partnership		
SCG3744	LGP-Riverside Co Partnership		
SCG3745	LGP-San Bernardino Co Partnership		

Program ID	Program Name	Date Added (new programs)	Date Removed
SCG3746	LGP-Santa Barbara Co Partnership		
SCG3747	LGP-South Bay Cities Partnership		
SCG3748	LGP-San Luis Obispo Co Partnership		
SCG3749	LGP-San Joaquin Valley Partnership		
SCG3750	LGP-Orange Co Partnership		
SCG3751	LGP-SEEC Partnership		
SCG3752	LGP-Community Energy Partnership		
SCG3753	LGP-Desert Cities Partnership		
SCG3754	LGP-Ventura County Partnership		
SCG3755	LGP-Local Government Energy Efficiency Pilots		
SCG3756	3P-Energy Challenger		May 2013
SCG3757	3P-Small Industrial Facility Upgrades		
SCG3758	3P-PREPS		
SCG3759	3P-On Demand Efficiency		
SCG3760	3P-HERS Rater Training Advancement		
SCG3761	3P-MF Home Tune-Up		
SCG3762	3P-CLEO		
SCG3763	3P-MF Direct Therm Savings		
SCG3764	3P-LivingWise		
SCG3765	3P-Manufactured Mobile Home		
SCG3766	3P-SaveGas		January 2015
SCG3768	3P-CA Sustainability Alliance		
SCG3769	3P-PoF		
SCG3770	3P-PACE		
SCG3771	3P-Innovative Designs for Energy Efficiency Activities (IDEEA365)		
SCG3773	LGP-New Partnership Programs		
SCG3774	LGP-LG Regional Resource Placeholder		
SCG3775	CRM		
SCG3776	LGP-Gateway Cities Partnership		
SCG3777	LGP-San Gabriel Valley COG Partnership		
SCG3778	LGP-City of Santa Ana Partnership		
SCG3779	LGP-West Side Cities Partnership		
SCG3780	LGP-City of Simi Valley Partnership		2016
SCG3781	LGP-City of Redlands Partnership		
SCG3782	LGP-City of Beaumont Partnership		2016
SCG3783	LGP-Western Riverside Energy Partnership		
SCG3793	3P - IDEEA365 - Instant Rebates! Point of Sale Food Service Equipment Program	March 2014	
SCG3794	3P - IDEEA365 Water Loss Control Program	May 2014	2016
SCG3795	3P-IDEEA365 - Commercial Sustainable Development Program	August 2014	2016
SCG3796	3P-IDEEA365-On Demand Efficiency for Campus Housing	March 2015	
SCG3797	3P-IDEEA365-Energy Advantage Program for Small Business	November 2014	

Program ID	Program Name	Date Added (new programs)	Date Removed
SCG3798	3P-IDEEA365-Connect	March 2015	
SCG3799	3P-IDEEA365-Historical Building Energy Efficiency	August 2015	
SCG3800	3P-IDEEA365-Clear Ice	August 2015	
SCG3801	LGP - North Orange County Cities Partnership	April 2015	
SCG3802	LGP - San Bernardino Regional Energy Partnership	April 2015	
SCG3803	SW-FIN-California Hub for EE Financing	October 2014	
SCG3804	3P-IDEEA365-On-Premise Ozone Laundry	January 2016	
SCG3805	Statewide CEE - Direct Install Incentives	2016	
SCG3806	Statewide ET - Water Energy Nexus Shared Network Advanced Meter Infrastructure Pilots	2016	

Appendix B.1 – Updated Monthly Report

The Updated Monthly Report can be found on the EEStats website:
<http://eestats.cpuc.ca.gov/Views/Documents.aspx>

Appendix B.2 – Updated Quarterly Report

The Updated Quarterly Report can be found on the EESStats website:
<http://eestats.cpuc.ca.gov/Views/Documents.aspx>