

**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)

**SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M)  
ENERGY EFFICIENCY PROGRAMS ANNUAL REPORT 2017 RESULTS**

**PUBLIC VERSION**

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2017 RESULTS**

San Diego Gas & Electric Company (“SDG&E”) hereby submits its Annual Report for 2017 energy efficiency programs and accomplishments. The Annual Report is prepared in accordance with the Administrative Law Judge’s Ruling Adopting Annual Reporting Requirements for Energy Efficiency and Addressing Related Reporting Issues dated August 8, 2007. The Ruling requires “each utility to file its annual report on May 1 of the year following the end of a given program year.”

SDG&E’s Annual Report, as required in Decision (“D.”) 16-06-010 Ordering Paragraph (“OP”) 9, includes a discrete chapter describing the various energy efficiency activities and results affecting water use, activities authorized as part of the water-energy nexus, and other programs that impact water use across the energy efficiency portfolio, as well as energy and water savings, and spending resulting from these activities.

Finally, consistent with D.18-01-004 OP 8, SDG&E provides a confidential and public version of its current third-party program contracts.

SDG&E’s Annual Report and associated documents have also been uploaded and are available for viewing on the California Public Utilities Commission’s California Energy Data and Reporting System (CEDARS) website.

Respectfully submitted,

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**ANNUAL REPORT**  
**2017 RESULTS**



A  Sempra Energy utility

## Table of Contents

EXECUTIVE SUMMARY.....	1
2017 ENERGY EFFICIENCY PROGRAM PORTFOLIO SUMMARY.....	6
A.    Statewide Residential Energy Efficiency Programs.....	6
1.    SDGE3201 SW CALS – Energy Advisor – HEES (UAT).....	6
2.    Statewide CALSPREE – Plug Load and Appliances.....	7
a.    SDGE3203 SW-CALS – Plug Load and Appliances – HEER.....	7
b.    SDGE3204 SW-CALS – Plug Load and Appliances – POS Rebates.....	8
3.    SDGE3207 SW-CALS Multifamily Energy Efficiency Rebate Program.....	9
4.    SDGE3209 SW-CALS EUC HUP.....	9
5.    SDGE3213 SW-CALS-CAHP/ESMH – California Advanced Homes.....	11
6.    SDGE3293 SW-CALS Residential HVAC- HVAC Core.....	12
7.    SDGE3302 SW-CALS – Res Upstream HVAC Equipment Incentive.....	13
8.    SDGE3303 SW-CALS – Res HVAC Code Compliance Incentive.....	13
B.    Statewide Commercial Energy Efficiency Programs.....	14
1.    SDGE3215 SW-COM-Strategic Energy Management.....	14
2.    SDGE3216 SW-COM-Customer Services-Benchmarking.....	14
3.    SDGE3217 SW-COM-Customer Services – Audits Non-Res.....	15
4.    SDGE3220 SW-COM-Calculated Incentives-Calculated.....	16
5.    SDGE3222 SW-COM-Calculated Incentives – Savings by Design.....	17
6.    SDGE3223 SW-COM-Deemed Incentives – Commercial Rebates.....	18
7.    SDGE3225 SW-COM-Deemed Incentive-HVAC Core.....	18
8.    SDGE3313 - Locational Energy Efficiency (LEE).....	19
C.    Statewide Industrial Energy Efficiency Programs.....	20
1.    SDGE3227 SW-IND-Strategic Energy Management.....	20
2.    SDGE3228 SW-IND-Customer Services – Benchmarking.....	20
3.    SDGE3229 SW-IND-Customer Services – Audits Non-Res.....	21
4.    SDGE3231 SW-IND-Calculated Incentives-Calculated.....	22
5.    SDGE3233 SW-IND-Deemed Incentives.....	23
D.    Statewide Agricultural Energy Efficiency Programs.....	24
1.    SDGE3234 SW-AG-Customer Services-Benchmarking.....	24
2.    SDGE3236 SW-AG-Customer Services – Audits Non-Res.....	25
3.    SDGE3237 SW-AG-Calculated Incentives-Calculated.....	26

4.	SDGE3239 SW-AG-Deemed Incentives .....	27
E.	Statewide Lighting Programs.....	27
1.	SDGE3240 SW-Lighting Market Transformation .....	27
2.	SDGE3241 SW-Lighting-Lighting Innovation – ETPC Measure Development (MD) .....	28
3.	SDGE3245 SW-Lighting-Primary Lighting.....	29
F.	Local Institutional Partnerships: .....	30
1.	SDGE3266 LInstP-CA Department of Corrections Partnership .....	30
2.	SDGE3267 LInstP-California Community College Partnership.....	31
3.	SDGE3268 LInstP-UC/CSU/IOU Partnership .....	32
4.	SDGE3269 LInstP-State of California/IOU Partnership.....	34
5.	SDGE3270 LInstP-University of San Diego (USD) Partnership.....	35
6.	SDGE3271 LInstP-San Diego County Water Authority Partnership.....	37
G.	Local Government Partnerships:.....	39
1.	SDGE3272 LGP – City of Chula Vista Partnership .....	39
2.	SDGE3273 LPG – City of San Diego Partnership.....	41
3.	SDGE3274 LGP – County of San Diego Partnership .....	42
4.	SDGE3275 LGP – Port of San Diego Partnership.....	46
5.	SDGE3276 LPG – SANDAG Partnership .....	48
6.	SDGE3277 LGP – SEEC Partnership .....	49
7.	SDGE3278 LPG – Emerging Cities Partnership .....	51
H.	Statewide Emerging Technologies Programs.....	52
1.	SDGE3246 SW-ET – Technology Introduction Support.....	52
2.	SDGE3247 SW-ET – Technology Assessment Support .....	54
3.	SDGE3248 SW-ET – Technology Development Support.....	54
I.	Statewide Finance Program .....	56
1.	SDGE3262 SW-FIN – On-Bill Finance .....	56
J.	Statewide Codes and Standards Program .....	56
1.	SDGE3249 SW-C&S – Building Codes & Compliance Advocacy .....	58
2.	SDGE3250 SW-C&S – Appliance Standards Advocacy .....	58
3.	SDGE3251 SW-C&S – Compliance Enhancement.....	60
4.	SDGE3252 SW-C&S – Reach Codes.....	61
5.	SDGE3253 SW-C&S – Planning Coordination.....	63
K.	Statewide Integrated Demand Side Management (IDSM) .....	64

1.	SDGE3260 Local-IDSMS-ME&O – Local Marketing (EE).....	64
2.	SDGE3261 Local-IDSMS-ME&O – Behavioral Programs (EE).....	70
3.	SDGE3282 SW-IDSMS – IDSMS.....	72
L.	Statewide Workforce Education & Training.....	75
1.	SDGE3254 SW-WE&T – Centergies.....	75
2.	SDGE3255 SW-WE&T – Connections.....	78
3.	SDGE3257 SW-WE&T – Strategic Planning.....	78
M.	Third Party Programs.....	79
1.	SDGE3211 (3P) Local-CALS – Middle Income Direct Install (MIDI).....	79
2.	SDGE3212 (3P) SW-CALS - Residential HVAC-QI/QM (AC Quality Care).....	80
3.	SDGE3224 (3P) SW-COM-Deemed Incentives – HVAC Commercial.....	80
4.	SDGE3226 (3P) SW-COM Direct Install.....	81
5.	SDGE3230 (3P) SW-IND-Customer Services - Audits Comprehensive Industrial Energy Efficiency Program (CIEEP).....	82
6.	Customer Services – Pump Test Services.....	82
a.	SDGE3235 (3P) SW-AG-Customer Services-Pump Test Services.....	82
b.	SDGE3291 (3P) SW-IND-Customer Services-Pump Test Services.....	83
c.	SDGE3292 (3P) SW-COM-Customer Services – Pump Test Services.....	84
7.	SDGE3279 (3P) Res-Comprehensive Manufactured – Mobile Home.....	85
8.	SDGE3280 (3P) Innovative Designs for Energy Efficiency Activities (IDEEA) 365.....	85
9.	SDGE3307 (3P) Zero Energy Loss Drain Adoption.....	86
10.	SDGE3310 (3P) – Multifamily Heat Pump Optimizer.....	86
11.	SDGE3311 (3P) – Energy Advantage Program (EAP).....	87
N.	Pilot Programs.....	90
1.	Prop 39 Zero Net Energy (ZNE) Schools Pilot Program.....	90
O.	High Opportunity Project or Programs (HOPPs).....	91
1.	SDGE3317 HOPPs Retrocommissioning (RCx).....	91
2.	SDGE3318 HOPPs Multifamily.....	93
P.	SDGE3324 Water Energy Nexus Initiatives.....	94
1.	Water Energy Nexus (WEN) Calculator and Measure Workpaper Activities.....	96
2.	Advanced Metering Infrastructure Pilot Activities.....	96
3.	Energy Matinee Pricing Tariff Pilot Activities.....	97
4.	Energy Efficiency WEN Programs and Activities.....	97

5. WEN Programs and Activities.....	98
Q. Other Energy Efficiency Activities and Programs .....	98
1. SDGE3259 SW-ME&O.....	98
2. SDGE3281 EM&V – Evaluation Measurement and Verification .....	99
3. SDGE3288 Customer Relationship Management (CRM)/Energy Efficiency Collaboration Platform (EECP).....	99
4. Statewide New Finance Offerings .....	100
SECTION 2 - EMISSION REDUCTIONS.....	103
SECTION 3 - EXPENDITURES.....	104
SECTION 4 - COST EFFECTIVENESS.....	105
SECTION 5 - RATEPAYER IMPACTS .....	106
SECTION 6 - SAVINGS BY END-USE.....	107
SECTION 7 - COMMITMENTS.....	108
SECTION 8 - SHAREHOLDER PERFORMANCE INCENTIVES.....	109
APPENDIX A – SDG&E 2017 Program Numbers .....	110
APPENDIX B – Updated December 2017 Monthly Report.....	114
APPENDIX C – 2018 Third Party Programs .....	115
APPENDIX D – Table 3 – Expenditures .....	116



## EXECUTIVE SUMMARY

San Diego Gas & Electric Company (SDG&E) is committed to energy efficiency and helping our customers manage their energy costs as their trusted energy advisor. SDG&E's energy efficiency portfolio is designed to promote the objectives of the California Long-Term Energy Efficiency Strategic Plan (Strategic Plan) adopted by the California Public Utilities Commission (CPUC or Commission). Using the guiding principles of innovation, integration, and comprehensiveness that SDG&E used in designing its 2017 program portfolio, SDG&E's energy efficiency program portfolio achieved substantial annual energy savings. Over the past year, SDG&E's efforts saved nearly 482 million gigawatt hours, reduced energy demand by approximately 87 megawatts, and saved nearly 2.10 million therms. In addition to helping customers save money, save energy, and live more comfortably, these gas and electric energy savings have reduced CO<sub>2</sub> by over 450 thousand tons, the equivalent of removing over 95 thousand cars from the road in support of the State's goal of reducing greenhouse gas (GHG) emissions.

SDG&E continues to provide innovative and user-friendly solutions to enable customers to take control of their energy use and reduce their bills. By signing up for My Account through SDG&E's website, customers can access the Energy Management Tool, which helps them manage their energy use by providing updates on how and where they use energy the most. Customers can conveniently access their consumption history via the Green Button process, and have the option to authorize a third party to review and analyze their energy use data through Green Button Connect My Data. In addition, SDG&E customers can borrow an in-home display device from SDG&E at no cost to understand their home's energy use and identify high energy use appliances with near-real time information and estimated energy costs.

SDG&E's Marketplace offers customers an easy way to review and purchase energy efficiency related products. In 2016, SDG&E launched a new Marketplace feature that provides efficiency ratings to help customers make informed decisions. In 2017, Marketplace was updated with fast track rebate functionality, so that customers can easily

file for rebates by uploading their receipt and entering all their information on one page. Marketplace also promoted rebate eligible energy efficient products through a multi-channel engagement involving email and digital display ads, search engine keywords, and Facebook posts. Also in 2017, in accordance with Assembly Bill (AB) 793, a new Connected Apps category was added to Marketplace. This functionality allows customers to track their energy usage through mobile and non-mobile apps. To complement Marketplace online, SDG&E launched an instant in-store rebate. The in-store rebate launched in mid-November, and by December 31, 2017, over 4,100 rebates had been redeemed.

In response to 2016 challenges with lighting measures in SDG&E's Commercial, Industrial and Agricultural rebate programs, SDG&E shifted all lighting offerings to a midstream delivery channel in 2017. The midstream channel allows for an immediate integration of new statewide lighting requirements into the program. All other non-lighting products continued to be offered through the downstream channel.

Integrated Demand Side Management (IDSM) efforts continued to provide demand response enabled programmable communicating thermostats to both residential and commercial customers in 2017. SDG&E also worked with its non-residential customers, such as schools, local government agencies, and others, to develop integrated projects which combine energy efficiency measures and equipment with demand response programs and solar photovoltaic (PV) projects, enabling these customers to meet their own GHG targets and to reach at or near Zero Net Energy (ZNE). SDG&E also works with local schools as they develop energy efficiency projects under Proposition (Prop) 39. SDG&E's AB 793 Energy Management Systems' programs, to be launched in 2018, will help to bring customers into the future of innovative technology solutions. SDG&E initiated solicitation efforts in 2017.

Another way that SDG&E has enhanced customer experience is through its annual Energy Showcase awards. Through this event, SDG&E recognizes non-residential customers that complete exemplary comprehensive energy saving projects. These business and government partners serve as models to others in the community as they have installed energy efficiency measures, participated in demand response programs, and,

in some cases, implemented additional conservation efforts. The common thread among all is their commitment to green practices and their desire to continue to expand in this area. 2017's winners represented a variety of market segments and implemented a variety of energy savings measures. The 2017 Grand Champion was Sharp Healthcare. Other winners included San Diego Unified School District (education K-12), Hollywood Casino (entertainment), Marriott Marquis San Diego (hospitality), CP Kelco (manufacturing), San Diego Food Bank (non-profit), Añejo Bar & Grill (small and medium business) and San Diego Ice Arena (sports venue).

In addition, SDG&E supported the energy efficiency efforts of its local government and institutional partnerships. SDG&E's partners save energy within their own facilities and operations, and increase awareness of energy efficiency opportunities for customers through a variety of program offerings. As part of this collaboration and recognizing the unique challenges faced by the public sector, SDG&E extended the On-Bill Financing Program loan term for government-funded customers from ten years to a maximum of fifteen years. In 2017, partnership activity continued to focus on climate action planning activities, which emphasize energy efficiency and other climate related goals.

In 2017, SDG&E also continued its strategic focus on the multifamily sector by advancing comprehensive energy efficiency measures, including: whole house solutions, plug load efficiency, visual monitoring and displays, performance standards, and demand side management (DSM) integration. Additionally, SDG&E successfully supported the linking of the multifamily sector to program incentives available to the many low income families within its territory by dedicating a multifamily Single Point of Contact (SPOC) to such marketing activities. In so doing, SDG&E furthered its success in overcoming the multifamily split-incentive barrier by making property owners/managers and their tenants aware of all energy efficiency offerings as well as the income qualified services available to them. Via a combined promotion of programs offered under the Multifamily Energy Efficiency Rebate Program (MFEER) Program, and not offered under MFEER (such as the Energy Savings Assistance Program (ESAP), the California Alternate Rates for Energy (CARE), and Family Electric Rate Assistance (FERA) programs), SDG&E was not only

successful in increasing the participation in energy efficiency within the multifamily market segment, but also successfully served the interests of its low income and disadvantaged communities within the segment during the 2017 calendar year. SDG&E's energy efficiency programs are becoming a bigger part of the solution for maintaining grid reliability and achieving the state's aggressive climate goals. SDG&E actively participates in proceedings addressing how Distributed Energy Resources (DERs), like energy efficiency, can achieve the state's reliability and climate related goals.<sup>1</sup> SDG&E is also actively participating in energy efficiency proceedings designed to implement SB 350,<sup>2</sup> which requires a doubling of energy efficiency by 2030. SDG&E's Energy Efficiency Business Plan, submitted to the Commission in January of 2017, describes efforts to chart a course towards achieving zero net energy (ZNE) and doubling energy efficiency savings. The plan describes SDG&E's strategies to increase energy efficiency by reducing barriers to implementation, raising customer awareness, and increasing participation by focusing on the following principles:

- Supporting state policy goals to double energy efficiency;
- Providing innovative solutions to customer needs;
- Improving customer experience;
- Maximizing the value of the energy portfolio; and
- Positioning energy for success in a more integrated resource acquisition structure.

SDG&E's energy efficiency program portfolio is poised to launch into California's distributed energy future.

### **Conclusion**

SDG&E's energy efficiency vision remains clear and consistent with the plans and policies of the State of California as adopted in the Strategic Plan. SDG&E maintains its commitment to its customers' ongoing challenge of managing their energy costs through energy efficiency, energy conservation and demand reduction. Improving the program

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<sup>1</sup> Integrated Distributed Energy Resources and Integrated Resource Planning proceedings.

<sup>2</sup> 2017 Energy Efficiency Business Plan (A.17-01-014), Commission Energy Efficiency Proceeding Phase 3 (R.13-11-005), and the CEC's Rulemaking "General Rulemaking Proceeding for Developing Regulations, Guidelines and Policies for Implementing SB 350 and AB 802, Docket 16-01R-01."

portfolio using the guidelines of innovation, integration, and comprehensiveness will remain an emphasis. SDG&E looks forward to continued collaboration with the CPUC, state, regional, and other stakeholders during the transition into the Rolling Portfolio Business Plan structure, which is expected to increase the flexibility and continuity of the energy efficiency portfolios in 2018 and beyond.

## 2017 ENERGY EFFICIENCY PROGRAM PORTFOLIO SUMMARY

### A. Statewide Residential Energy Efficiency Programs

#### 1. SDGE3201 SW CALS – Energy Advisor – HEES (UAT)

##### **Program Description:**

This program is a continuation of the existing Statewide Energy Advisor Program (formerly known as the Home Energy Efficiency Survey-HEES Program) within the residential energy efficiency portfolio. Although the four California investor-owned utilities (IOUs) share similar program theories, goals, and design elements, each IOU may be implementing a unique tool by a different vendor.

In 2017, the Energy Advisor Program continued to help customers understand their energy use through various tools and educational opportunities. The program utilizes behavioral outreach initiatives and interactive tools designed to engage and encourage customers to reduce their energy consumption through program recommendations and, as warranted, IDSM opportunities. Additional tools that are available to customers through the program are usage analysis and household usage data and comparison, as well as literature and information on how customers can save money and energy. These tools utilize smart meter data or a customer's self-reported data to provide a detailed overview of how energy is used in their household and what can be done to save energy and money.

##### **Implemented Strategies:**

In 2017, the number of completed audits increased over 55% due to the promotion of an additional audit option on the Home Energy Report (HER) platform. The HER platform is available to all residential customers and serves as an additional channel to audit tools and energy saving recommendations. The HER cross-promotion resulted in over 2,400 additional audits and, due to this increase in audits from HER participants, program management initiated a review and comparison of industry best practices, portal functionality and customer feedback. SDG&E plans to streamline options in 2018 to improve the customer experience, audit completions and cross-promotion of program offerings.

## **2. Statewide CALSPREE – Plug Load and Appliances**

The Plug Load and Appliances (PLA) Program develops and builds upon existing retailer relationships and point of sale strategies. It is comprised of two subprograms: Home Energy Efficiency Rebate (HEER) Subprogram and Point of Sale (POS) Subprogram. These two PLA subprograms offer incentives to customers to purchase and install high efficiency products (such as ENERGY STAR®) and work with key marketers to drive the adoption of higher efficiency products.

### **a. SDGE3203 SW-CALS – Plug Load and Appliances – HEER**

#### **Program Description:**

The PLA - HEER Subprogram provides downstream rebates for energy efficient products such as heat pump water heaters, gas water heaters, clothes washers, pool pumps, and smart thermostats. Customers can access rebates through the SDG&E Marketplace at [marketplace.sdge.com](http://marketplace.sdge.com) or by submitting a paper application.

#### **Implemented Strategies:**

SDG&E continues to identify areas of opportunity to boost customer participation with effective marketing strategies that encourage customers to visit its marketplace website, including segmented email campaigns, digital marketing, and in-store materials. Customers that visit SDG&E's Marketplace can apply for a downstream rebate with a simplified redemption process. Rebate process improvements reduced traditional downstream barriers such as cumbersome application process. As SDG&E offers more rebates on energy efficient products both midstream and upstream, program participation in the traditional downstream model will continue to diminish. It is anticipated this effort to transition measures away from the downstream model will continue in 2018. However, the downstream program is necessary to ensure customers can purchase from their desired retail location. Not all retailers are able to join POS efforts and therefore downstream continues to be a need to ensure customer choice.

Products were listed on the SDG&E Marketplace with a rebate icon to identify which units qualified for a rebate. Customers then selected a product to begin filling out the rebate application, or they clicked 'claim rebate' to complete the application and manually

enter a qualifying product. Once the application was filled out, customers then submitted their proof of purchase receipt by email. Upon verification by the processing implementer, customers received a Visa card in the mail through the third quarter of 2017. In the fourth quarter of 2017, SDG&E began offering rebates through an online gift card redemption site giving customers more retailer gift card options.

**b. SDGE3204 SW-CALS – Plug Load and Appliances – POS Rebates**

**Program Description:**

The Plug Load and Appliances (PLA) – Point of Sale (POS) Subprogram provides midstream and upstream rebates to customers in a cost effective way while optimizing the customer experience. This program leverages retailer, distributor, contractor, and manufacturer relationships to offer customers incentives for high efficiency product purchases. The PLA - POS Subprogram provides instant rebates, removing traditional downstream program barriers like limited impact, low cost effectiveness, and cumbersome customer application process, although the number of cost effective offerings are limited.

**Implemented Strategies:**

In 2017, SDG&E's PLA - POS Subprogram expanded midstream and upstream participation substantially. The program added new big box retailers like Lowe's and Best Buy. Regular store visits, in-store training, and communications to retail partners ensured program detail and updates were widely known and accepted. Retail partners include store and/or department management, supervisors, and sales lead associates. The store training consisted of in-store presentations and program review by the program implementer and product manufacturers. PLA - POS signage was updated when program changes occurred, as well as when the program realized opportunities for increased customer awareness.

In the fourth quarter of 2017, SDG&E became one of the first utilities in the United States to offer a validated POS rebate in-store for smart thermostats by leveraging an application programming interface (API) that allows instant validation of eligibility to receive a rebate. SDG&E demonstrated industry-leading innovative approaches to customer programs by thoughtfully leveraging technology and partnerships, resulting in



more cost effective residential measures and thus an increase in rebate redemptions. SDG&E is sharing its lessons learned with other utilities nationwide and key market actors.

### **3. SDGE3207 SW-CALS Multifamily Energy Efficiency Rebate Program**

#### **Program Description:**

The Multifamily Energy Efficiency Rebate (MFEER) Program offers a variety of incentives to motivate multifamily property owners and managers to install energy efficiency products. These products can be installed in both common areas and dwellings of multifamily complexes and in common areas of mobile home parks and condominiums. An additional objective of the program is to heighten energy efficiency awareness with property owners, property managers and tenants.

#### **Implemented Strategies:**

The MFEER Program continues to integrate various SDG&E programs to ensure that all multifamily offers are presented to the property owner or management company. In 2017, SDG&E began to utilize a multifamily SPOC approach to provide a one-stop shop for multifamily property owners and managers. Through the SPOC, SDG&E facilitates the multifamily property owners' participation in all customer programs while minimizing the confusion that owners or managers may have regarding program participation and qualification. The SPOC coordinates common area and in-unit enrollments so they appear to be one comprehensive, whole building program from the participant's perspective. The SPOC approach also allows for a better review process of what is working and what is not, identifying areas where refinements in the programs may be needed to improve property owner/manager satisfaction with utility programs. In 2017, SDG&E also focused on optimizing measure mix and measure costs of the program to improve cost effectiveness. The goal for 2018 and beyond is to implement this effort sector-wide, thus achieving even greater cost effectiveness throughout SDG&E's portfolio and optimizing ratepayer funds as much as possible.

### **4. SDGE3209 SW-CALS EUC HUP**

#### **Program Description:**

The Energy Upgrade California (EUC) Home Upgrade Program (HUP) provides

assistance and incentives for home improvement projects that can increase energy efficiency and make homes more comfortable. The program rewards a comprehensive, whole-home approach that includes improvements such as heating, air-conditioning, and water heating. This makes homes more comfortable while lowering utility bills.

There are two paths to the program. There is a home upgrade path that uses a deemed/performance hybrid approach, and an advanced home upgrade path that uses comprehensive energy modeling. These paths allow the customer to choose from a variety of measures that best suit their home and needs.

There is also a multifamily component to this program. The EUC-MF uses a performance-based approach to encourage property owners to choose the most cost effective measures to achieve a minimum 10 percent improvement, at the whole-building level, over existing conditions.

#### **Implemented Strategies:**

SDG&E brought contractor training and management in-house and optimized third party vendor contracts for 2018 to further reduce costs. All participating contractors have been trained to process projects directly in SDG&E's database, which saves costs and shortens the timeframe in which customers receive rebates. A two-step application process has been implemented to better assess the project pipeline and budget management.

SDG&E worked collaboratively with our third party vendors to ensure program communications were current, relevant and timely during 2017. The communication channels utilized for contractor engagement were in the form of newsletters and contractor roundtable meetings.

SDG&E completed approximately 250 home upgrade projects in 2017. Of those projects, approximately 40 were modeled advanced home upgrade projects. The EUC-MF Program completed energy efficient upgrades on five multifamily properties, which included over 1,100 residential customer units.

## **5. SDGE3213 SW-CALS-CAHP/ESMH – California Advanced Homes**

### **Program Description:**

The California Advanced Homes Program (CAHP) is a comprehensive residential new construction 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-related industries to exceed compliance with the California Code of Regulations, Title 24, Part 6, and Building Energy Efficiency Standards for Residential and Non-Residential Buildings (Standards). The program also aims 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, low-rise and high-rise multifamily residential new construction.

### **Implemented Strategies:**

The CAHP supports the implementation of California's most updated building code changes with the support of the statewide CAHP team and various industry partnerships. There was a collaborative effort with Codes and Standards to ensure that builders are educated on the benefits of advanced attics, walls, and windows, as well as other identified residential new construction solutions, and the cost benefit associated with these more advanced measures. Additionally, the statewide CAHP team worked closely through their partnership with Building Industry Association to educate the building industry about new ways to correctly install these advanced envelope measures, and spread awareness of measure support when considering these specific measures through marketing. The 2017 program year was a successful year for the CAHP. The program exceeded 2017 program electric energy savings goals.

The CAHP continued to implement new code readiness efforts by educating builders on best new construction best practices. Statewide CAHP efforts continue to work at administering a program that supports energy efficiency, demand response, and renewables, with the ultimate goal of building ZNE homes by 2020. The CAHP will continue to transform the residential new construction market via direct guidance to the

building industry as well as providing incentives for cost effective energy efficiency.

## **6. SDGE3293 SW-CALS Residential HVAC- HVAC Core**

### **Program Description:**

The Statewide Residential Heating, Ventilation, and Air Conditioning (HVAC) Core Program delivers a comprehensive set of downstream, midstream, and upstream strategies that build on existing program education and marketing efforts and leverages relationships within the HVAC industry to transform the market towards a sustainable, quality driven market. Market transformation, energy savings and demand reductions are achieved and/or supported through multiple subprograms that make up the comprehensive program approach in support of the Strategic Plan and the HVAC Action Plan.

The primary objective of this program is to drive high quality levels in California's HVAC market for technology, equipment, and installation and maintenance with realized energy savings. An additional objective is to raise customer awareness of the value of HVAC installation and maintenance practices in driving energy efficiency and peak load reduction.

### **Implemented Strategies:**

During 2017, SDG&E and the IOUs' HVAC Program teams, individually and through the Western HVAC Performance Alliance (WHPA), collaborated on improving the performance of the 2017 HVAC Program. Throughout the year, SDG&E actively participated in WHPA committees, sub-committees, and working groups, which produced approximately 14 work products aimed at advancing efficiency and quality in the HVAC market. For example, one such work product, "Understanding the Residential HVAC Compliance Shortfall", was completed by the Compliance Committee. The work product explored reasons why much of the residential HVAC replacement work is unpermitted and offered recommendations for closing the gap towards compliance. This supports the Strategic Plan by improving HVAC compliance and the statewide IOU quality installation programs. The IOUs' collaboration across multiple WHPA committees continued work to address the Strategic Plan and other broad market transformation goals. Most notably in 2017, the IOUs led the transition of the WHPA to an independent 501c3 non-profit

corporation which will enhance its value for California and its ratepayers and increase organizational effectiveness.

## **7. SDGE3302 SW-CALS – Res Upstream HVAC Equipment Incentive**

### **Program Description:**

The Residential Upstream HVAC Distributor Incentive Program provides incentives to distributors for stocking and selling high efficiency HVAC units and furnaces, which helps the program maximize the opportunities to influence the repair, replace, or purchase decision and transform the HVAC market through the supply chain. Manufacturers and distributors influence HVAC contractor purchases and stocking and may use the incentives at their discretion to promote high efficiency product sales.

### **Implemented Strategies:**

The California Energy Commission (CEC) climate zone changes in March of 2016 impacted the program, particularly in zip codes that were shifted from climate zone 10 to climate zone 7. In 2017, the program expanded to all zip codes in SDG&E's service territory which increased customer participation and exceeded expectations for sales of premium efficiency residential HVAC equipment. Additionally, distributors are consistently interested in the program and continue to make adjustments to accommodate program needs.

## **8. SDGE3303 SW-CALS – Res HVAC Code Compliance Incentive**

### **Program Description:**

The Residential HVAC Code Compliance Program provides incentives to HVAC distributors for working with their installation contractors to initiate the Home Energy Rating System (HERS) process and to end use customers for working with their local building departments to finalize their HVAC permits. Incentives are paid at the upstream and downstream levels to fairly and efficiently encourage the start and finish of the compliance processes and to encourage discussion of the value of compliance at the high-leverage, key decision points of the market process. The expected outcome of the program is to be demonstrated by an increased number of finalized residential permits for HVAC replacements and an increased number of HVAC replacement jobs tracked by the HERS

registries. This program is offered within select city jurisdictions in climate zone 10.

**Implemented Strategies:**

The HVAC Code Compliance Program was discontinued pursuant to CPUC Decision (D.) 17-11-006.

**B. Statewide Commercial Energy Efficiency Programs**

**1. SDGE3215 SW-COM-Strategic Energy Management**

**Program Description:**

The IOUs co-designed the Strategic Energy Management (SEM) Program to replace the Commercial Continuous Energy Improvement (CEI) Program in 2017. The SEM Program will strive to provide long-term consulting services to educate and train industrial customers to achieve deep energy efficiency savings through an energy management approach.

**Implemented Strategies:**

During 2017, SDG&E fund shifted program funds allocated from the Commercial SEM Program to the Industrial SEM program. SDG&E will focus on the initial SEM implementation within the industrial market to ensure program success and program methodology acceptance, before expanding to commercial customers.

**2. SDGE3216 SW-COM-Customer Services-Benchmarking**

**Program Description:**

AB 802 was signed into law in October 2015. The bill required utilities, by January 1, 2016, to maintain records of the energy usage data of all buildings to which they provide service for at least the most recent 12 complete months. By January 1, 2017, the bill required each utility, upon the request and the written authorization or secure electronic authorization of the owner, owner's agent or operator of a covered building, as defined, to deliver or provide aggregated energy usage data for a covered building to the owner, owner's agent, operator or to the owner's account in the ENERGY STAR Portfolio Manager, subject to specified requirements.

**Implemented Strategies:**

In 2017, SDG&E continued to assist customers by offering tools and help with

uploading building energy usage data to Portfolio Manager, where customers can calculate and obtain their benchmarking score. SDG&E and its stakeholders, along with the other IOUs, continued to work closely with the CEC to continue to develop and automate (to be completed in 2018) the AB 802 provisions that require: (1) the utilities to provide energy consumption data for impacted non-residential and multifamily property owners or their agents upon request; and (2) the CEC to establish an updated benchmarking and public disclosure program for buildings. This information will allow building owners and property managers to better understand their energy consumption through standardized energy use metrics.

### **3. SDGE3217 SW-COM-Customer Services – Audits Non-Res**

#### **Program Description:**

The Comprehensive Audit Program is an IDSM audit that produces a comprehensive audit report that is equivalent to an American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Level 2 report. SDG&E offers two types of audits: 1) Category 1 audit, which consists of a high-level walkthrough that provides an equipment inventory and high level payback estimates of the identified measures; and 2) Category 2, which is a more detailed analysis of selected measures with investment-grade savings and financial calculations and deliverables. The Category 2 audit is geared toward businesses that plan to implement recommended measures within one year of the audit being completed. As an IDSM program, audit scope and reports for both Category 1 and Category 2 audits include energy efficiency, demand response, and distributed generation opportunities. These audits are performed by vetted engineering firms and the audit report delivers valuable insights about how and where energy is being consumed. The program is designed to provide businesses a roadmap on various actions they can take to reduce their overall energy consumption and reduce operating costs.

#### **Implemented Strategies:**

The Comprehensive Audit Program had an increase in audits performed at customer sites in 2017. The increase was due to the vendors and account executives delivering qualified leads for the program and the ability for customers to submit an online audit

request via SDG&E's website. Audits were performed for various business types including universities, hospitality facilities, office buildings, and retail stores. The majority of the audits performed were Category 1 audits, which resulted in the customer receiving a report that includes a complete inventory of their energy consuming equipment. SDG&E also performed Category 2 audits for customers who had previously completed a Category 1 audit. The Category 2 audit was performed based on specific measures from the Category 1 report, allowing for a comprehensive site evaluation. In 2017, SDG&E received roughly 125 commercial audit requests, of which approximately 120 were completed in 2017. The remaining audits are targeted to be completed in Q2 2018.

#### **4. SDGE3220 SW-COM-Calculated Incentives-Calculated**

##### **Program Description:**

The Calculated Incentives Subprogram provides customized incentives for non-residential energy efficiency retrofit projects involving the installation of high efficiency equipment or systems. Incentives are paid based on the energy savings and permanent peak demand reduction above and beyond baseline energy performance, which includes state-mandated codes, federal-mandated codes, industry-accepted performance standards, or other baseline energy performance standards. New offerings provide a framework to encourage emerging technologies and deeper, more comprehensive retrofits.

##### **Implemented Strategies:**

In 2017, the program continued to experience reduced customer participation. As in prior years, SDG&E continued to receive feedback from customers, trade professionals and internal stakeholders regarding the additional time and expense of complying with increasingly complex program requirements. Many factors contribute to this feedback including the complex Calculated Incentive Program requirements and intricacies, such as the Custom Measure Project Archive (CMPA) parallel review process, collection of incremental measure cost, and preponderance of evidence documentation for early retirement measures. The application of the Industry Standard Practice as an alternative baseline has resulted in drastic reduction of potential project savings. As a result, the program shifted a large portion of its program incentive dollars to SDG&E's Primary



Lighting Program. SDG&E will continue to conduct monthly training sessions for external stakeholders to reinforce and improve the knowledge of the program participants on the various details and requirements of the program.

The EEBI Subprogram continued to refine the project tracking and payment repository system known as Energy Efficiency Collaboration Platform (EECP) by adding new workflows and modifications, allowing the program to leverage data for enhanced analytics and improved milestone tracking.

In addition, the EEBI Subprogram continued to coordinate with a number of internal and external stakeholders to enhance project submissions and selected project tracking to improve efficiencies in the CMPA parallel review process.

SDG&E, together with other stakeholders through the working group, will continue to work with Commission staff to improve and streamline the program process.

## **5. SDGE3222 SW-COM-Calculated Incentives – Savings by Design**

### **Program Description:**

The Savings by Design (SBD) Subprogram serves the commercial new construction segment. It promotes integrated design by providing owner incentives and design assistance to participants who design spaces that perform at least 10% better than Title 24.

### **Implemented Strategies:**

In 2017, the SBD Subprogram continued to experience steady growth. The SBD Program continued to refine the project tracking and payment repository system known as EECP by adding new workflows and modifications, allowing the program to leverage data for enhanced analytics and improved milestone tracking.

In addition, the SBD Subprogram continued to coordinate with a number of internal and external stakeholders to enhance project submissions and selected project tracking to improve efficiencies in the CMPA parallel review process. Also, the statewide SBD group collaborated closely to improve dissemination of industry information to redesign and update its energydesignresources.com website. To improve program visibility in the territory, SBD continued to collaborate with the American Institute of Architects (AIA), San Diego chapter, to promote efficiency training, site tours, efficiency recognition and website

tools to its approximately 800+ members. Additionally, the SBD design assistance initiative supported two local ZNE new construction library projects. This continuing collaboration with the AIA, along with the continued design assistance focus on ZNE will serve as an effective conduit for increasing project participation for the upcoming program year.

## **6. SDGE3223 SW-COM-Deemed Incentives – Commercial Rebates**

### **Program Description:**

The Statewide Commercial Deemed Incentives Subprogram provides rebates for the installation of new energy efficient equipment. Deemed retrofit measures have prescribed energy savings and incentive amounts and are generally intended for projects that have well-defined energy and demand savings estimates.

### **Implemented Strategies:**

In 2017, the Commercial Rebates Program shifted all lighting offerings to a midstream delivery channel to manage the high demand for lighting rebates in 2016. The change in delivery channel was also due in part to the numerous lighting standard changes; the midstream channel allows for an immediate integration of new requirements into the program. The midstream channel works directly through distributors to buy down the cost of lighting products. The incentive is passed through to the customer in the form of a discount. Lighting rebates were not offered in the program until the midstream model was fully developed and launched in August 2017. The delay contributed to a significant reduction in program participation overall for 2017. All other non-lighting products continued to be offered through the downstream channel.

Monthly trainings for trade professionals continued in 2017. These trainings provided a high level overview of the program and gave the trade professionals access to work directly with program advisors. Trainings have been well attended and well received.

## **7. SDGE3225 SW-COM-Deemed Incentive-HVAC Core**

### **Program Description:**

The Statewide Commercial HVAC Core Program delivers a comprehensive set of downstream, midstream, and upstream strategies that build on existing education and marketing efforts and leverage relationships within the HVAC industry to transform the

market towards a sustainable, quality-driven market. Market transformation, energy savings and demand reductions are achieved and/or supported through multiple subprograms that make up the comprehensive program approach in support of the Strategic Plan and the HVAC Action Plan.

The primary objective of this program is to influence California's HVAC market for technology, equipment, installation and maintenance with realized energy savings. An additional objective is to increase customer awareness of the value of HVAC installation and maintenance practices in driving energy efficiency and peak load reduction.

**Implemented Strategies:**

During 2017, SDG&E and the IOUs' HVAC Program teams, individually and through the Western HVAC Performance Alliance (WHPA), collaborated on improving the performance of the 2017 HVAC Program. Throughout the year, SDG&E actively participated in WHPA committees, sub-committees and working groups that produced approximately 14 work products aimed at advancing efficiency and quality in the HVAC market. For example, one work product, "Test Protocols and Procedures to Support HVAC System Performance Assessment", was completed by the Commercial Quality Installation Field Data Specifications Working Group. The objective was to develop simple protocols and procedures that can be used by professionals in the field to measure and score the performance of installed HVAC systems. This supports the Strategic Plan of making quality installation and maintenance the norm and will benefit the statewide IOU quality installation programs. The IOUs' collaboration across multiple WHPA committees continued work to address the Strategic Plan and other broad market transformation goals.

**8. SDGE3313 - Locational Energy Efficiency (LEE)**

**Program Description:**

Through a combination of energy efficiency and demand response activities, the Locational Energy Efficiency Program sought to achieve energy and demand savings in parts of the distribution grid identified as nearing capacity. For this program, the goal was two MW of demand savings in an area served by two substations ("Target Area"). This was the first effort of its kind in the SDG&E service territory; therefore, an additional objective

was to test the particular program design for use with future program offerings.

**Implemented Strategies:**

In 2017, a final report was drafted describing the strategies SDG&E implemented and lessons learned. Best practices were documented to inform future locational program iterations and other similar program proposals including SDG&E's Rolling Portfolio Business Plan. The final report was distributed to service lists R.13-11-005, R.13-09-011 and R.14-10-003 in October 2017. SDG&E is using lessons learned from this program to inform other distributed energy resource proceedings aimed at targeted DSM.

**C. Statewide Industrial Energy Efficiency Programs**

**1. SDGE3227 SW-IND-Strategic Energy Management**

**Program Description:**

The Statewide Industrial Strategic Energy Management (SEM) Program utilizes a measurement and verification guideline developed in a joint process with the IOUs and the CPUC. The SEM Program employs a holistic, whole-facility approach that uses Normalized Metered Energy Consumption (NMEC) and a dynamic baseline model to determine savings from all program activities at the facility, including capital projects, maintenance and operations, and retrocommissioning.

**Implemented Strategies:**

During the first three quarters of the year, the California IOUs and the CPUC worked to develop and design the SEM program. The efforts resulted in two main documents, the California Industrial SEM Design Guide and the California Industrial SEM M&V Guide. These two documents are the foundation of how the Industrial SEM Program will be implemented within California.

In the fourth quarter of the year, each IOU ran solicitations for a third party contractor to implement the Industrial SEM program within their respective service territories. SDG&E selected a contractor, and program activities will commence in 2018.

**2. SDGE3228 SW-IND-Customer Services - Benchmarking**

**Program Description:**

AB 802 was signed into law in October 2015. By January 1, 2016, the bill required

utilities to maintain records of the energy usage data of all buildings to which they provide service for at least the most recent 12 complete months. By January 1, 2017, the bill required each utility, upon the request and the written authorization or secure electronic authorization of the owner, owner's agent or operator of a covered building, as defined, to deliver or provide aggregated energy usage data for a covered building to the owner, owner's agent, operator or to the owner's account in the ENERGY STAR Portfolio Manager, subject to specified requirements.

#### **Implemented Strategies:**

In 2017, SDG&E continued to assist customers by offering tools and help with uploading building energy usage data to Portfolio Manager where customers can calculate and obtain their benchmarking score. SDG&E and its stakeholders, along with the other IOUs, continued to work closely with the CEC to continue to develop and automate (to be completed in 2018) the AB 802 provisions that require: (1) the utilities to provide energy consumption data for impacted non-residential and multifamily property owners or their agents upon request; and (2) for the CEC to establish an updated benchmarking and public disclosure program for buildings. This information will allow building owners and property managers to better understand their energy consumption through standardized energy use metrics.

### **3. SDGE3229 SW-IND-Customer Services – Audits Non-Res**

#### **Program Description:**

The Comprehensive Audit Program is an IDSM audit that produces a comprehensive audit report that is equivalent to an ASHRAE Level 2 report. SDG&E offers two types of audits: 1) Category 1, which consists of a high level walkthrough that provides an equipment inventory and high level payback estimates of the identified measures; and 2) Category 2, which is a more detailed analysis of selected measures with investment-grade savings and financial calculations and deliverables. The Category 2 audit is geared towards businesses that plan to implement recommended measures within one year of the audit being completed. As an IDSM Program, audit scope and reports for both the Category 1 and Category 2 audits include energy efficiency, demand response, and distributed generation

opportunities. These audits are performed by vetted engineering firms and the audit reports deliver valuable insights about how and where energy is being consumed. The program is designed to provide businesses a roadmap on various actions they can take to reduce their overall energy consumption and reduce operating costs.

**Implemented Strategies:**

The Comprehensive Audit Program had an increase in participation in 2017. The increase was due to the industrial account executives delivering leads to the program and customers having the ability to submit an online audit request via SDG&E's website. Audits were performed for various business types including manufacturing facilities, water treatment plants, military facilities, and research and development facilities. The majority of the audits performed were Category 1 audits, which resulted in the customer receiving a report that includes a complete inventory of their energy consuming equipment. SDG&E also performed Category 2 audits for customers that had completed a Category 1 audit. The Category 2 audit was performed based on specific measures from the Category 1 report, allowing for a comprehensive evaluation. In 2017, SDG&E received roughly 24 industrial audit requests that were either completed or are pending completion in Q2 2018.

**4. SDGE3231 SW-IND-Calculated Incentives-Calculated**

**Program Description:**

The Calculated Incentives Subprogram provides customized incentives for non-residential energy efficiency retrofit projects involving the installation of high efficiency equipment or systems. Incentives are paid on the energy savings and permanent peak demand reduction above and beyond baseline energy performance, which includes state-mandated codes, federal-mandated codes, industry-accepted performance standards or other baseline energy performance standards. New offerings provide a framework to encourage emerging technologies and deeper, more comprehensive retrofits.

**Implemented Strategies:**

In 2017, the program continued to experience reduced customer participation. As in prior years, SDG&E continued to receive feedback from customers, trade professionals, and internal stakeholders regarding the additional time and expense of complying with

increasingly complex program requirements. Many factors contribute to this feedback including the complex Calculated Incentive Program requirements and intricacies, such as the CMPA parallel review process, collection of incremental measure cost, and preponderance of evidence documentation for early retirement measures. The application of the Industry Standard Practice as an alternative baseline has resulted in drastic reduction of potential project savings. Another factor is the increased frequency of measure energy savings being drastically reduced or removed from offerings due to conflict with Commission Industry Standard Practice edict. As a result, the program shifted a large portion of its program incentive dollars to SDG&E's Primary Lighting Program.

The EEBI Subprogram continued to refine the project tracking and payment repository system known as EECP by adding new workflows and modifications, allowing the program to leverage data for enhanced analytics and improved milestone tracking.

In addition, the EEBI Subprogram continued to coordinate with a number of internal and external stakeholders to enhance project submissions and selected project tracking to improve efficiencies in the CMPA parallel review process.

SDG&E will continue to conduct monthly training sessions for external stakeholders to reinforce and improve the knowledge of the program participants on the various details and requirements of the program. Additionally, together with other stakeholders through the working group, SDG&E will continue to work with Commission staff to improve and streamline the program process.

## **5. SDGE3233 SW-IND-Deemed Incentives**

### **Program Description:**

The Statewide Industrial Deemed Incentives Subprogram provides rebates for the installation of new energy efficiency equipment. Deemed retrofit measures have prescribed energy savings and incentive amounts and are generally intended for projects that have well-defined energy and demand savings estimates.

### **Implemented Strategies:**

In 2017, the Industrial Rebates Program shifted all lighting offerings to a midstream delivery channel to mitigate the high demand on lighting rebates. The change in delivery



channel was also due in part to the numerous lighting standard changes; the midstream channel allows for an immediate integration of new requirements into the program. The midstream channel works directly through distributors to buy down the cost of lighting products. The incentive is passed through to the customer in the form of a discount. Lighting rebates were not offered in the program until the midstream model was fully developed and launched in August 2017. The delay contributed to a significant reduction in program participation. All other non-lighting products continued to be offered through the downstream channel.

Monthly trainings for trade professionals continued in 2017. These trainings provided a high level overview of the programs and gave the trade professionals access to work directly with program advisors. Trainings have been well attended and well received.

#### **D. Statewide Agricultural Energy Efficiency Programs**

##### **1. SDGE3234 SW-AG-Customer Services-Benchmarking**

###### **Program Description:**

AB 802 was signed into law in October 2015. The bill required utilities, by January 1, 2016, to maintain records of the energy usage data of all buildings to which they provide service for at least the most recent 12 complete months. By January 1, 2017, the bill required each utility, upon the request and the written authorization or secure electronic authorization of the owner, owner's agent or operator of a covered building, as defined, to deliver or provide aggregated energy usage data for a covered building to the owner, owner's agent, operator or to the owner's account in the ENERGY STAR Portfolio Manager, subject to specified requirements.

###### **Implemented Strategies:**

In 2017, SDG&E continued to assist customers by offering tools and help with uploading building energy usage data to Portfolio Manager where customers can calculate and obtain their benchmarking score. SDG&E and its stakeholders, along with the other IOUs, continued to work closely with the CEC to continue to develop and automate (to be completed in 2018) the AB 802 provisions which require: (1) the utilities to provide energy consumption data for impacted non-residential and multifamily property owners or their



agents upon request; and (2) for the CEC to establish an updated benchmarking and public disclosure program for buildings. This information will allow building owners and property managers to better understand their energy consumption through standardized energy use metrics.

## **2. SDGE3236 SW-AG-Customer Services – Audits Non-Res**

### **Program Description:**

The Comprehensive Audit Program is an IDSM audit that produces a comprehensive audit report that is equivalent to an ASHRAE Level 2 report. SDG&E offers two types of audits: 1) Category 1, which consists of a high-level walkthrough that provides an equipment inventory and high level payback estimates of the identified measures; and 2) Category 2, which is a more detailed analysis of selected measures with investment-grade savings and financial calculations and deliverables. The Category 2 audit is geared towards businesses that plan to implement recommended measures within one year of the audit being completed. As an IDSM Program, audit scope, and reports for both the Category 1 and Category 2 audits include energy efficiency, demand response, and distributed generation opportunities. These audits are performed by vetted engineering firms and the audit reports deliver valuable insights about how and where energy is being consumed. The program is designed to provide businesses a roadmap on various actions they can take to reduce their overall energy consumption and reduce operating costs.

### **Implemented Strategies:**

The Comprehensive Audit Program agricultural segment did not receive the anticipated level of participation in 2017. In 2017, SDG&E received a total of six agricultural audit requests. Of the six requests, only one was completed. The other five either did not qualify for the program or the customer opted out of the audit. The completed audit was a Category 1 and identified energy efficiency as well as demand response opportunities the customer could pursue to reduce their energy consumption. Overall participation in the program is low due to the fact that SDG&E has a small, hard to reach, agricultural segment in its service territory. The program continues to work closely with SDG&E's account executives to identify potential customers that would be good

candidates for the Comprehensive Audit Program. In addition to working with the account executives to generate leads, SDG&E will work with the marketing team to produce targeted marketing collateral for this segment.

### **3. SDGE3237 SW-AG-Calculated Incentives-Calculated**

#### **Program Description:**

The Calculated Incentives Subprogram provides customized incentives for non-residential energy efficiency retrofit projects involving the installation of high efficiency equipment or systems. Incentives are paid on the energy savings and permanent peak demand reduction above and beyond baseline energy performance, which includes state-mandated codes, federal-mandated codes, industry-accepted performance standards or other baseline energy performance standards. New offerings provide a framework to encourage emerging technologies and deeper, more comprehensive retrofits.

#### **Implemented Strategies:**

In 2017, the program continued to experience reduced customer participation. As in prior years, SDG&E continued to receive feedback from customers, trade professionals, and internal stakeholders regarding the additional time and expense of complying with increasingly complex program requirements. Many factors contribute to this feedback including the complex Calculated Incentive Program requirements and intricacies, such as the CMPA parallel review process, collection of incremental measure cost, and preponderance of evidence documentation for early retirement measures. Another factor is the increased frequency of measure energy savings being drastically reduced or removed from offerings due to Commission Industry Standard Practice edict.

The EEBI Subprogram continued to refine the project tracking and payment repository system known as EECP by adding new workflows and modifications, allowing the program to leverage data for enhanced analytics and improved milestone tracking.

In addition, the EEBI Subprogram continued to coordinate with a number of internal and external stakeholders to enhance project submissions and selected project tracking to improve efficiencies in the CMPA parallel review process.

SDG&E will continue to conduct monthly training sessions for external stakeholders

to reinforce and improve the knowledge of the program participants on the various details and requirements of the program

#### **4. SDGE3239 SW-AG-Deemed Incentives**

##### **Program Description:**

The Statewide Agricultural Deemed Incentives Subprogram provides rebates for the installation of new energy efficiency equipment. Deemed retrofit measures have prescribed energy savings and incentive amounts and are generally intended for projects that have well-defined energy and demand savings estimates.

##### **Implemented Strategies:**

In 2017, the Agricultural Rebates Program shifted all lighting offerings to a midstream delivery channel to mitigate the high demand on lighting rebates. The change in delivery channel was also due in part to the numerous lighting standard changes; the midstream channel allowed for an immediate integration of new requirements into the program. The midstream channel works directly through distributors to buy down the cost of lighting products. The incentive is passed through to the customer in the form of a discount. Lighting rebates were not offered in the program until the midstream model was fully developed and launched in August 2017. The delay contributed to a significant reduction in program participation. All other non-lighting products continued to be offered through the downstream channel.

Monthly trainings for trade professionals continued in 2017. These trainings provided a high level overview of the program and gave the trade professionals access to work directly with program advisors. Trainings have been well attended and well received.

#### **E. Statewide Lighting Programs**

##### **1. SDGE3240 SW-Lighting Market Transformation**

##### **Program Description:**

The Lighting Market Transformation Subprogram encompasses a statewide program strategy that coordinates IOU efforts to promote efficient lighting technologies and best practices in California. The subprogram entails development of innovative data-driven strategies to adapt utility lighting programs to the ever-changing energy and

lighting markets in support of the Strategic Plan. The program tracks, coordinates, and provides collaboration opportunities for utility, government, and industry lighting market transformation activities. The program oversees the progression of lighting solutions across utility programs, such as Emerging Technologies, Lighting Innovation, Primary Lighting, and Codes and Standards, as well as Commercial, Industrial, and Agricultural Incentive Program lighting measures. The program is particularly instrumental in the development of lighting innovation program concepts, trials, and demonstrations. Lighting Market Transformation helps ensure efficient progression of lighting solutions into and out of customer energy efficiency programs.

**Implemented Strategies:**

During 2017, SDG&E collaborated with the statewide IOU lighting team and stakeholders on the future of this subprogram. Due to the significant increase in LED product availability and decreasing costs, SDG&E reassessed the subprogram market strategies. Due to the high demand in Primary Lighting, the subprogram funds were shifted to Primary Lighting to further provide cost effective product solutions to new, hard to reach customer locations.

**2. SDGE3241 SW-Lighting-Lighting Innovation - ETPC Measure Development (MD)**

**Program Description:**

The Lighting Innovation Subprogram evaluates products or program approaches new to the market, which have potential to eventually enter the Primary Lighting Program or Commercial, Industrial, and Agricultural programs. Lighting Innovation trials, pilots, and studies are administered to collect data on the sales, installation, marketing, and other business aspects of the lighting industry to determine data-driven recommendations and influence future program designs. Showcases and field placement projects are conducted when applicable.

**Implemented Strategies:**

In 2017, SDG&E had the opportunity to partner with Philips to provide “Smart LED” Philips Hue combo packs as a promotion when customers purchased Nest thermostats

through the Plug Load and Appliance Program. The intent was to promote home automation and smart controls throughout the house.

During the course of the 2017 program year, SDG&E continued the presence of pop-up retail events operated by a third party vendor. These Lighting Fair events have proven to be an effective method of reaching large audiences with special promotions that encourage customers to purchase and install new LED lamps in their homes. Hosted at popular locations with heavy foot traffic (home and garden shows, December Nights at Balboa Park, corporate Earth Day events, etc.), customers are offered packs of LED and BR30 lamps.

### **3. SDGE3245 SW-Lighting-Primary Lighting**

#### **Program Description:**

The Primary Lighting Program offers upstream rebates to participating manufacturers to reduce the retail cost of energy efficient lighting products. It introduces new premium efficiency lighting products into the market and attempts to influence the future purchasing and installation behaviors of residential customers. The Primary Lighting Program is based on a mass market approach targeted at all SDG&E residential customers and promotes only high quality, premium efficiency LEDs.

#### **Implemented Strategies:**

During 2017, SDG&E's Primary Lighting Program worked with 10 different manufacturers and supported dozens of different models or configurations of residential lighting products. Participating manufacturers established and maintained an ongoing relationship with area retailers to sell qualifying products identified with special logos or signage.

SDG&E's Primary Lighting Program also continued to modify the list of products, eligible rebate levels, and retailers participating in the program to accommodate the increasing specifications of CEC LEDs and changing baseline requirements. SDG&E worked with those manufacturers providing CEC-specification lamps and their affiliated retailers to properly position these new products and effectively promote them to customers.

SDG&E also worked with manufacturers to promote efficient lighting in over 200

hard to reach locations, such as small grocery stores, drug stores, low income markets, and resale shops. By doing so, SDG&E expanded the reach of efficient lighting into new avenues and reached customers that may not typically purchase efficient equipment or shop at a larger retail location. These hard to reach market locations allowed SDG&E to greatly increase the number of customers served and provide deeper market energy savings via an increased primary lighting program budget.

SDG&E allocated a larger portion of the portfolio to primary lighting in 2016 versus 2017. This was a result of strategic portfolio planning to target traditionally underserved, high potential market segments as described above and to capitalize on savings that will be sunset with code changes and CPUC lighting dispositions. In order to learn about the potential in this segment, SDG&E is conducting field surveys to understand more about how this effort impacted customers.

## **F. Local Institutional Partnerships:**

### **1. SDGE3266 LInstP-CA Department of Corrections Partnership**

#### **Program Description:**

The California Department of Corrections and Rehabilitation (CDCR) Partnership is a customized statewide energy efficiency partnership program that accomplishes immediate, long-term peak energy demand savings and establishes a permanent framework for sustainable, long-term comprehensive energy management programs at CDCR institutions served by California's four 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.

#### **Implemented Strategies:**

In 2017, CDCR started to reactivate retrofit projects that had been put on hold in 2016, performing Investment Grade Audits and scoping out projects. The IOUs and the Program Administration Manager (PAM) supported development of the new projects,

ensuring that they reached maximum efficiency and incentive potential. To support more project development, the IOUs performed energy audits on a subset of CDCR's facilities, which CDCR is using to prioritize the next wave of projects.

The program undertook an effort to ensure new construction and gas saving water conservation projects were clearly tracked and proactively managed. The IOUs provided ongoing training to the ESCOs around changes to IOU financing options (enhanced incentives, rebates and OBF) and processes. Regular management team meetings (every four weeks) and executive team meetings (quarterly) have been key to identifying and managing projects, and to proactively addressing any potential program challenges.

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 Energy Efficiency Partnership, efficiency projects can be identified and implemented through the IOU core and OBF Programs. OBF has been and remains the primary source of funding and, in select instances, is supplemented by either Special Repairs Project funding or Department of General Services' GS \$mart program.

## **2. SDGE3267 LInstP-California Community College Partnership**

### **Program Description:**

The California Community Colleges (CCC) Partnership is a unique, statewide program to achieve immediate and long-term energy savings and peak demand reduction within California's higher education system. The statewide incentive funding of over \$2.5M for the 2017 program year was utilized 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 meets quarterly to conduct business at the management level, and the executive team also meets quarterly to discuss overall program status and policy issues.

The Partnership also focuses heavily on outreach efforts in several areas, including:

(1) development of a comprehensive list of technologies, project types, and offerings to be used by team members during campus visits to help generate project ideas; (2) evaluation of new project technologies for suitability in the community college market; and (3) planning and participation in California community college (CCC) conferences and regional campus forums.

**Implemented Strategies:**

The Partnership participated in quarterly campus forums in both Northern and Southern California, serving as a venue for districts to share successes and strategies for common challenges related to facilities management and energy efficiency. The Partnership team presented at these forums, providing time-sensitive updates on new technologies, information on program implementation, and direct assistance to districts in attendance.

The Partnership has provided extensive outreach and technical support to the districts within the CCC system in support of their efforts to identify, develop and implement projects funded through Prop 39, the California Clean Energy Jobs Act of 2012. The Prop 39 Program continues to be very successful with over 880 energy projects funded (approximately 460 of which were installed and closed out by the end of 2017). These projects will result in annual energy savings of 104 million kWh and 1.6 million therms, saving the CCCs \$15.5 million per year in reduced energy costs system-wide. All 72 CCC districts throughout California are actively participating in the program and have benefited.

**3. SDGE3268 LInstP-UC/CSU/IOU Partnership**

**Program Description:**

The University of California (UC)/California State University (CSU) Partnership is a unique, statewide program which includes the four California IOUs as well as the recent addition of LA Department of Water and Power (LADWP), in partnership with UC and CSU. 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. Since its establishment in 2004, the



Partnership has provided approximately 65 MW demand reduction and delivers approximately 470 million kWh/year and 25 million therms/year in energy savings.

**Implemented Strategies:**

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 targeted to university campuses. In addition to representatives from each utility, the UC Office of the President and CSU Chancellor's Office each have members on all three program management teams. Inclusion of all Partnership stakeholders at the various management levels provides the UC and CSU campuses with support in their efforts to implement energy efficiency projects. A program administrative manager 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.

*Administrative Strategies* - The IOUs began implementation of various approved High Opportunity Project or Programs (HOPPs) including a whole building program consistent with SB 350, AB 802 and AB 1150 to demonstrate measured savings against existing conditions, pay for performance, and a comprehensive whole-building approach to building efficiency. In addition, a Partnership Data Dashboard was expanded from its first iteration in 2016, which allowed partners to easily access and export current and historical Partnership project data. New charts were added to the site to provide greater visibility to the future outlook of the Partnership for UC, CSU, and the IOUs. There was also extensive collaboration between UC, CSU, and the IOUs to develop revised MBCx guidelines.

*Projects* - There was also a significant volume of energy efficiency projects delivered in 2017 and underway for future years. For example, roughly 80 retrofits, MBCx, and new construction projects were completed at 21 different UC and CSU campuses (inclusive of UC Med Centers).

*Training, Education and Outreach* - With respect to training, education, and outreach, there was an Energy Managers' Meeting, hosted by the Partnership as a post-conference workshop of the California Higher Education Sustainability Conference, which provided an interactive session for UC and CSU energy managers to share best practices, lessons learned, and other practical advice. Further, the Training and Education Scholarship Program was continued, granting over \$50,000 in funding to UC and CSU campuses to attend the energy efficiency related training(s) of their choice, as approved by the Partnership. In addition, a highlight video and web-based case studies were developed for the 2017 Best Practice Awards. The training and education team also held two workshops in Northern and Southern California, focusing on how to use whole-building energy performance targets throughout a building's design, construction, and operations. Finally, a workshop was held at UCLA introducing energy managers to the basic fundamentals of SkySpark, a building analytics software widely used across both UC and CSU systems.

Overall, the UC/CSU Partnership made progress towards the 2017 program cycle goals, totaling over 2,500 kW (~112% of goal), 22.2 million kWh (~79% of goal), approximately 1.2 million therms (~143% of goal), and providing over \$7.4 million in incentives (~106% of goal).

#### **4. SDGE3269 LInstP-State of California/IOU Partnership**

##### **Program Description:**

The State of California 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 the IOUs. This is accomplished by collaborating with the Department of General Services (DGS), coordinating with the DGS established pool of energy service companies (ESCOs) to help implementation of comprehensive facility energy efficiency projects and working with individual state agencies on technology-specific projects. The DGS leverages Department of Finance Energy \$mart program, along with the IOUs' OBF, incentives, and rebates to provide financing for project opportunities.

### **Implemented Strategies:**

The Partnership Program Administration Manager (PAM) coordinates between the IOUs and DGS through regular meetings to ensure that project documentation is shared as needed, projects are tracked, project momentum is maintained, new project approaches are identified and customer concerns/support items are addressed in a coherent fashion.

DGS began the lengthy process of Investment Grade Audits (IGAs) on behalf of various departments, and worked with the departments to scope and approve projects. The IOUs supported this effort by training the ESCO pool on IOU program requirements and processes, ensuring IGAs and project scopes included energy efficiency elements that qualify for funding assistance (through either or both enhanced OBF and enhanced incentives/rebates), and that the calculations quantifying the savings were accurate and defensible. The IOUs worked with DGS to prioritize agencies that may benefit from ESCO work, both for large and pooled small buildings. While these projects are slow to unfold given various state procurement processes, they are expected to yield large energy savings upon completion.

For smaller facilities, individual state departments worked with the IOUs to implement quick, technology-specific projects using existing third party programs, such as SDG&E's Direct Install Program.

In addition, the IOUs attended the Sustainable Building Working Group meetings, a State of California working group that consists 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 are met regarding benchmarking energy data. The IOUs also use this platform for agency outreach.

### **5. SDGE3270 LInstP-University of San Diego (USD) Partnership**

#### **Program Description:**

The USD Partnership Program is designed to create a more sustainable campus with a smaller environmental footprint through the adoption and implementation of a robust Climate Action Plan (CAP) anchored in energy efficiency that will reduce GHG emissions. USD will continue to create policies and procedures that encourage and facilitate long-term

energy savings for the university through implementation of its Sustainability Strategic Plan and CAP. Through outreach to students, staff, and alumni, with an emphasis on behavior modification, the program is also intended to educate campus audiences in identifying and adopting energy saving practices not only on campus, but also in their careers and homes.

**Implemented Strategies:**

In 2017, USD implemented projects and practices that resulted in significant savings, generated from multiple energy efficiency projects.

USD's Office of Sustainability held physical outreach efforts that reached over 3,000 people. This was achieved through 22 events and five presentations that addressed sustainability, energy efficiency, and/or climate change. The Office of Sustainability was also involved with six academic classes, assisting students with sustainability-related research projects. The Office of Sustainability's digital outreach was boosted with the launch of a new website in August and increased social media platforms (including the addition of a Snapchat account). The new website has been an essential marketing tool for communicating to the USD community regarding current efficiency projects, as well as providing sustainability-related resources and tips, and information about relevant events and news. The Office of Sustainability also submits sustainability project and program highlights and announcements to a new, weekly campus-wide (all university faculty, staff, and students) newsletter that is sent out via email to keep the campus up to date on all campus happenings. In addition, the Office of Sustainability has developed an online map filter on the main campus map that highlights sustainability features across campus.

The Office of Sustainability advanced its efforts in staff and student education via the Green Office, Eco-Resident and Sustainability Heroes Programs. A recertification process was developed and implemented for the Green Office Program in 2017, recognizing offices and departments on campus for their energy efficiency and sustainability efforts. A total of 74 offices have been certified, with 19 certifications awarded in the past year. Certified offices are now recognized on the Office of Sustainability website. During the fall of 2017, the Office also piloted the Eco-Resident Program, which aims to educate and

encourage behavior changes in students living in the residence halls to reduce their energy and water consumption and incorporate other sustainable practices into their lifestyle. 11 students participated in the pilot program. Four awards were granted as part of the Sustainability Heroes Program, recognizing students, faculty, and staff for their sustainable behaviors on and off campus.

This year a comprehensive document was created that tracks the consumption, costs, and savings generated by all gas and electric use on USD's campus from 2009-2017, providing insight on past performance. A manual demand response (load shedding) program was also developed, including temperature setbacks and enhanced scheduling during SDG&E events (critical peak pricing events).

## **6. SDGE3271 LInstP-San Diego County Water Authority Partnership**

### **Program Description:**

The San Diego County Water Authority (SDWCA) Partnership aims to achieve greater levels of awareness that eventually lead to increased participation by water agencies in joint water energy conservation programs offered by SDWCA and SDG&E to all market segments. In addition, the Partnership implements initiatives designed to maximize embedded energy savings while also promoting the San Diego region's water conservation priorities.

SDG&E and SDCWA established an Memorandum of Understanding (MOU) in 2016 that extends the partnership through 2020. The MOU included:

- Collaborate and assist in the identification and implementation of joint projects and to allocate funding from each entity towards joint projects as appropriate;
- Negotiate and execute projects with vendors to implement scopes of work;
- Create co-branding opportunities between both entities;
- Complete final reports by project with contractor support as necessary; and
- Hold monthly meetings with SDCWA to further determine additional activities to support the partnership.

### **Implemented Strategies:**

*Strategic Water Energy Plan* - Over the years, numerous stakeholders have explored

means of delivering joint energy and water programs. To address this gap, a consultant was hired to develop a Strategic Water Energy Partnership Framework. The document provided a framework for accelerating adoption of cost effective energy and water resource efficiency through joint delivery of programs and services for SDG&E and SDCWA customers. Using this plan as a starting point, in 2017 SDG&E and SDCWA started the process of developing plans to implement joint water energy programs and seeking collaboration opportunities that save both water and energy and allow the combination of water and energy rebates. This planning process focused on the following three areas:

- 1) Agriculture - a Coordinated Agricultural Water Energy Audit;
- 2) Commercial - a Commercial Direct Install Food Service offering; and
- 3) Residential – an offering within the Low Income Program.

These areas will be explored further in 2018.

*Leak Loss Detection* - California's water infrastructure is an emerging target for energy efficiency and GHG emission reduction efforts (CPUC's Rulemaking 09-11-014 and AB 32). However, allocating energy efficiency and GHG reduction dollars to water efficiency programs requires a method for calculating the energy intensity (EI) of water and reliable, verifiable monitoring of energy and carbon savings. With a foundational water system EI model already built for the Otay Water District, there was an opportunity identified to extend and test the model for evaluating programs that jointly conserve both water and energy resources, including forecasting energy savings from conservation programs and leak loss monitoring and remediation. The Center for Water Energy Efficiency (CWEE), UC Davis was selected to extend their research from previous years into the next phase. The data tool was enhanced by integrating customer consumption data with the existing datasets utilized for the EI analysis. In addition, CWEE built a tool to estimate the projected water and energy savings based on conservation programs targeted by customer type and/or by pressure zone. CWEE presented a draft report to SDG&E in late 2017 that will be finalized during early 2018. These CWEE tools, while modeled using the data from the Otay Water District, are intended to be expanded to other water districts throughout the state.

## **G. Local Government Partnerships:**

### **1. SDGE3272 LGP – City of Chula Vista Partnership**

#### **Program Description:**

The Chula Vista Local Government Partnership's goal is to create innovative approaches to improving community and municipal energy efficiency by integrating and leveraging the resources of multiple, diverse City departments. The program components include municipal facility efficiency improvements, strengthened building energy codes and inspections, energy saving development planning and design, community-based energy conservation education, facility evaluations, and financing assistance. The program serves City of Chula Vista residents and businesses estimated at 265,000 and 13,000, respectively, while also lending support to neighboring South Bay cities' energy efficiency efforts.

#### **Implemented Strategies:**

The Partnership continued to meet and exceed its designated objectives in creating new energy efficiency opportunities in the community. With respect to Municipal Energy Management, in late 2016, Chula Vista initiated a City-wide interior light LED retrofit for all City-owned buildings. The City estimates that this City-wide retrofit project will be completed by the end of 2018 or beginning of 2019. The City completed ASHRAE Level 2 audits on 24 City buildings and the results of the audits will be used for future large-scale projects such as HVAC retrofits at several facilities. In addition, to demonstrate the City's leadership, staff continued to participate in regular trainings designed to educate on Leadership in Energy and Environmental Design (LEED) / Existing Buildings and Operations and Maintenance (EBOM) best practices and as a result, four employees became LEED Green Associates. Staff moved forward in working to certify City Hall Building A with the LEED / EBOM Gold certification, a process that will continue into 2018 with the certification of two additional buildings.

*Community Energy Conservation & Upgrade Outreach* - With respect to Community Energy Conservation & Upgrade Outreach, City staff completed over 240 business energy evaluations (through the Free Resource & Energy Business Evaluation or FREBE) to



promote energy and water saving opportunities and SDG&E incentive programs. In addition to educating business owners and managers, the evaluations generated 173 direct referrals to the SDG&E Business Energy Solutions (BES) Program. For residents, City staff completed 99 home energy & water check-ups evaluations, which generated 263 referrals (47 direct & 216 non-direct) for SDG&E core and third party residential energy efficiency programs. Staff also participated in 44 community events where the team engaged with more than 1,300 community members. In 2017, the City also completed its participation in the two-year Georgetown University Energy Prize, which aims to engage residents to make lasting equipment changes and short-term behavior changes to save energy. Chula Vista won the award for most energy saved. Finally, over 13,000 hard to reach individuals were engaged through the Empower Hour (youth), Library Energy Lounges (seniors & others), and the Green Homes for All (low income households) programs.

*Sustainable Communities Program* - With respect to the Sustainable Communities Program, Chula Vista continued to host regular Energy Code/CalGreen trainings for City staff and hosted similar trainings for community members, builders, and contractors to help improve compliance and energy savings. To better assist developers in complying with energy code, the City continued to staff the “Sustainability Desk” which assisted staff and developers with more than 183 one-on-one meetings related to energy code issues and 22 secondary field audits. City staff, with the help of SDG&E, completed an educational project at the Civic Center Library that has a visual and curriculum component. The project is aimed to teach sixth graders about energy efficiency through wall murals and a tailored, standards-based curriculum that incorporates math and science. Finally, City staff continued to work with public health officials and community groups to identify innovative opportunities to integrate energy efficiency into public messaging, services, and infrastructure as part of a new city-wide “Healthy Communities” initiative.

*Regional Collaborations* - With respect to Regional Collaborations, in coordination with SDG&E and the San Diego Association of Governments, Chula Vista continues to lead the South Bay Energy Action Collaborative (SoBEAC), which provides technical and program peer support to smaller neighboring cities to catalyze energy efficiency initiatives



in their communities. As a result, 145 business energy evaluations (through the Free Resource & Energy Business Evaluation or FREBE) were conducted in National City, which led to 98 referrals to the SDG&E BES program. In addition, National City continued working with an ESCO company with a goal of saving energy at municipal facilities. Staff representing SoBEAC participated in at least one community event in each community (except Coronado), including two community events in neighboring South Bay cities where more than 22,000 community members attended. At a broader regional level, the City of Chula Vista serves as a steering committee member both for the San Diego Regional Climate Collaborative and San Diego Regional Energy Partnership, which has organized quarterly trainings, energy efficiency assistance programs, and information sharing for public agencies across the region on energy and climate-related topics.

## **2. SDGE3273 LPG – City of San Diego Partnership**

### **Program Description:**

The City of San Diego Local Government Partnership is a catalyst for increasing energy efficiency in City operations and in the community. Building on the success of previous funding cycles, the goal of the 2016-2020 City of San Diego Energy Efficiency Partnership is to increase the City's role in the region as an environmental steward, leader in best practices and to support the City's CAP. The five program areas focus on improving municipal building energy efficiency, codes and standards, community education, the San Diego Regional Energy Partnership (SDREP), and overall management of the partnership activities. While this is a non-resource program, savings resulting from the City's Local Government Partnership activities are captured in other programs offered by SDG&E.

### **Implemented Strategies:**

*Community Education, Outreach and Sustainability Support* – In 2017, the Partnership supported the City's launch of its own Green Business Network (GBN). Further, the City's Energy and Sustainability Division performed website updates as part of the GBN program upgrades. Collateral material was developed for GBN members, including a website landing page, pledge form, postcard, tri-fold brochure, and welcome letter for almost 100 members. In addition, the City's website has been updated,

showcasing its energy efficiency programs and projects. Also, video vignettes have been prepared for City website updates. In support of the GBN, the City reviewed and provided feedback for the GBN website and materials, established meetings with the City Communications Department, developed a business site visit checklist, continued ongoing coordination to gather interest from the business community, and coordinated with Business Improvement Districts to gather additional information to further refine the website.

*Energy Efficiency Improvements in Municipal Facilities and Operations* - In 2017, the Partnership collaborated on an Intelligent Control Outdoor Adaptive Lighting Project Retrofit. This project seeks to retrofit 14,000 outdoor lights and is projected to save approximately 12 million kWh. In addition, as part of the Partnership, 28 municipal facilities were audited. The City of San Diego was named the second most improved city, improving its standing through progress and achievements in reducing energy use and increasing energy and water efficiencies for municipal operations in 2017, gaining 14 positions to rank #13 nationally. Additionally, ENERGY STAR recognized the City of San Diego as one of the Top Cities in 2017, specifically placing #21 in the nation for the US Department of Energy Better Buildings Challenge. Further, the City continues to work on HVAC retrofit projects with the Facilities Department.

*Codes and Standards* - The City provided education and outreach regarding codes and standards to in-house staff through weekly reporting of Title 24, Part 6 residential and commercial planning, training sessions for staff on code updates and online Title 24 training workshops to increase subject matter expertise among Environmental Service Staff. In addition, the City is researching and drafting ordinance provisions around the early adoption of a benchmarking ordinance. Further, in support of codes and standards advances, the Partnership supported 44 City staff members attending LEED Green Associate Training.

### **3. SDGE3274 LGP – County of San Diego Partnership**

#### **Program Description:**

The County of San Diego Partnership is a savings and education program designed

to deliver net energy savings, peak demand savings and sustained efficiency through the implementation of both internal and external energy efficiency education and outreach programs, community-based energy efficiency implementation programs and implementation projects at County facilities. The County is a public agency containing many large-scale departments that fulfill different roles in implementing the goals and objectives of the Partnership. The Partnership will assist the County of San Diego in implementing several of its operational and community goals contained within its Strategic Energy Plan Implementation, including: Reducing Energy Usage and Cost; Reducing Embodied Energy in Potable Water Use; Green Buildings and Infrastructure; and Monitoring and Communication/Education. The Partnership will support Energy Efficiency Strategic Plan goals:

1. Local governments lead adoption and implementation of reach codes stronger than Title 24 on both mandatory and voluntary bases;
2. Strong support from local governments for energy code compliance enforcement;
3. Local governments lead by example with their own facilities and energy usage practices;
4. Local governments lead their communities with innovative programs for energy efficiency, sustainability, and climate change; and
5. Local government energy efficiency expertise becomes widespread and typical.

**Implemented Strategies:**

*Energy Code Training and ZNE Education*

In 2017, 20 Planning & Development Services Inspectors participated in training or self-study to improve their knowledge and application of California's 2016 Building Energy Efficiency Standards (Standards). Staff participated in in-house training and Residential and Nonresidential Standards for Energy Consultants training hosted by SDG&E, which covered significant changes in the Standards update that became effective on January 1, 2017. These trainings, along with designated time to study, have improved staff's ability to enforce energy requirements and provide guidance on best management practices to increase energy efficiency for construction projects. In addition, staff updated forms and

correction lists to reflect and enforce the changes in the updated Standards.

*Climate Action Plan (CAP)*

A draft CAP with 29 GHG reduction measures and a Draft Supplemental Environmental Impact Report (DSEIR) were released in mid-2017 for public review. After public review, the draft CAP and DSEIR were updated, and options for the Board of Supervisors to consider were developed. The draft CAP includes GHG-reducing strategies and measures across five categories.

*Energy Efficiency Carbon Mitigation Credit Program*

County staff initiated and conducted a collaborative research effort to investigate the feasibility of developing an Energy Efficiency Carbon Mitigation Credit Program. Staff coordinated monthly meetings with representatives from SDG&E and others to share resources and research. The County will continue to work with regional partners to define the scope and magnitude of projects implemented through a regional program. The County will also continue to research and possibly develop a mitigation credit program as indicated in General Plan Mitigation Measure CC-1.9.

*Energy Efficiency and Conservation Outreach Program*

The County Local Government Partnership team continued to lead by example through innovative education and community outreach programs. The Energy Saving Adventures (ESA) Program totaled 6,697 participants for the 2017 calendar year.

As a demonstration of program growth, the County refreshed the branding elements of the Local Government Partnership Educational Program and debuted the new “ESA: Rec Club Unplugged!” campaign. A key growth component of the ESA Program was the alignment of curriculum with the Next Generation Science Standards (NGSS), and as the program has matured into streamlined programming, it created a platform for collaboration with local schools and non-profits such as Sandberg Elementary in Mira Mesa. The ESA Program also made community appearances at the STEM Festival at Petco Park, and the Earth Fair at Balboa Park.

Other program highlights included a lesson in historical uses of energy at Balboa Park. Participants learned about San Diego’s rich history of using electricity-based

transportation. Using pedometers and curriculum created by staff, participants combined lessons in history as they hiked along the routes of the old streetcars with lessons in energy efficiency. Teens followed the streetcar route once used to transport patrons to and from Balboa Park during the Panama California Exposition in 1915 and were challenged to think of creative ways to harvest energy generated from human activity to create an energy efficient future.

The County has also implemented the following strategies in support of energy and water conservation and efficiency:

*Retrocommissioning*

In response to a draft report regarding findings from a retrocommissioning study, a preliminary list of measures was prepared, and findings were presented. Implementation began in September 2017 and is expected to be completed mid-2018.

*Whole Building Energy Assessments*

Five new sites have been identified for whole building energy modeling. Submeters will be installed starting Q1 2018.

*Leadership in Energy and Environmental Design (LEED) / Existing Buildings and Operations and Maintenance (EBOM)*

Energy Savings Design (ESD) has completed the process of LEED / EBOM certification of the Ramona Library, and LEED Gold certification was received in 2017.

In addition, the County has implemented ZNE construction and planning. The first County-owned ZNE building, Alpine Library, opened in May 2016. A second ZNE library was completed at Imperial Beach and opened in the second quarter of 2017.

Finally, the County's Long-Term Energy Efficiency Portfolio Plan is complete and in the process of being socialized. The County further created a Request for Proposal (RFP) package to guide project managers through the process of assembling project appropriate language for all future solicitations to require ZNE for each new construction project. To date, this tool has been used in 6 RFPs.

#### **4. SDGE3275 LGP – Port of San Diego Partnership**

##### **Program Description:**

The goal of the 2016-2020 San Diego Unified Port District (Port) Energy Efficiency Partnership is to increase the Green Port Program's role in the region as an environmental steward, to achieve progress on the Port's Climate Action Plan (CAP) GHG reduction goals, and to build on the success of the previous Partnership funding cycle. These goals will be accomplished by maximizing energy efficiency on Port tidelands and providing Port tenants, staff, and the public the necessary tools to make decisions that continue to promote energy efficiency. The Port's Partnership components include energy efficiency education and outreach to Port employees, implementation of strategies that will contribute to the CAP, education and outreach to businesses within the Port's jurisdiction through the Green Business Network (Network or GBN), and regional initiatives through the San Diego Regional Energy Partnership (SDREP).

Work done through the Partnership is concentrated within the Port's five-member cities: San Diego, Coronado, National City, Chula Vista, and Imperial Beach. These combined efforts aim to reduce energy usage and lower peak energy demands on Port tidelands.

##### **Implemented Strategies:**

The Partnership implemented the following strategies and accomplished the following objectives:

*Participation in the Green Business Network* – The Port Green Business Network is a voluntary integrated program designed to provide no-cost tools and resources to businesses within the Port tidelands to help reduce their energy use and environmental impacts. Members of the Network include waterfront industries, hotels, marinas, restaurants, and shops. Program resources consist of educational training, marketing videos, and energy audits. In addition, the Port GBN targets outreach initiatives to engage Network members on energy assessments and assistance with implementation of energy retrofits, including guiding participation into SDG&E core programs. During 2017, membership in the Network increased to 88 Port tenants. The Port held four educational

workshops with over 80 attendees and awarded seven Network members with Sustainable Achievement Awards.

*Energy-Focused Training* - In 2017, energy efficiency and sustainability trainings were promoted through quarterly memos, resulting in attendance of 176 employees for trainings involving LEED, Building Operation Certification, HVAC and lighting technologies, and energy efficiency.

*Utility Usage Reporting Ordinance* - Within the first year of implementation, the Port had set out to provide no cost training resources to tenants to facilitate understanding of energy benchmarking and advance compliance with the Port's Utility Usage Reporting Ordinance. To-date, the Port has provided nine in-person training resources, produced seven online training modules, developed a Portfolio Manager Reference Guide, and provided hundreds of hours of one-on-one support to tenants and sub-tenants to create Portfolio Manager accounts and benchmark facilities.

*Energy Audits at Port Facilities* - In 2017, the Port initiated a Task Authorization to conduct energy audits on Port facilities. Audits were conducted at two facilities and outlined a suite of proposed energy efficiency measures including smart thermostats, occupancy sensors, LED lights, and upgraded HVAC equipment. If all proposed measures were implemented, the Port would reduce electrical consumption annually by approximately 187,000 kilowatt hours. The Energy team has submitted a request for fiscal year 2018/2019 to implement the identified energy efficiency measures outlined in the energy audits (pending Board approval).

*Regional Outreach* - Considerable progress was made throughout 2017 on regional outreach, marked by the growth of the San Diego Regional Climate Collaborative ([www.sdclimatecollaborative.org](http://www.sdclimatecollaborative.org)), an initiative supported by the Port. The Port serves as one of the key subject matter experts on the development of an SDREP task to develop a Regional Green Business Network. In addition, Port staff provides oversight of SDREP reporting, budget management and invoice approvals in coordination with the Climate Collaborative, CSE, and the other SDREP partners. The *San Diego Regional Energy Partnership 2017 Final 2017 Report* includes specific accomplishments of the SDREP.



## **5. SDGE3276 LPG – SANDAG Partnership**

### **Program Description:**

The San Diego Association of Governments (SANDAG) serves as the regional planning agency for the 18 cities and County government of the San Diego region. The region's two largest cities, San Diego and Chula Vista, and the County government each have their own Local Government Partnership with SDG&E, as does the Port of San Diego. The SANDAG Local Government Partnership, a non-resource program created in 2010 called the Energy Roadmap Program, functions to effectively deliver energy efficiency services, climate action planning services and related assistance to the 16-member cities. The Energy Roadmap Program also allows SANDAG to integrate energy efficiency and GHG reduction practices and analysis into its internal operations and as part of the projects and plans it develops for the San Diego region. Considered together, the SANDAG partnership and the other Local Government Partnerships make it possible for every jurisdiction in the San Diego region to benefit from a Local Government Partnership in an efficient, coordinated manner and align local and regional planning and decision-making with state energy efficiency and climate change goals.

### **Implemented Strategies:**

The program successfully leveraged SDG&E Local Government Partnership funding to provide direct support to eight cities for the preparation and implementation of the energy efficiency-related elements of CAPs during 2017: Encinitas, La Mesa, Solana Beach, Lemon Grove, Vista, Imperial Beach, San Marcos, and Escondido.

The program was also successful in its delivery of energy engineering services to support implementation of local Energy Roadmaps. During 2017, the program delivered direct support to three cities: Carlsbad, San Marcos, and Vista, and made substantial progress on the development of a web-based energy savings tracking tool to support the implementation of energy savings projects identified with the completed Energy Roadmaps of the 16 Roadmap Cities.

In 2017, SANDAG also made substantial progress on the development of a comprehensive guidance document for climate action planning in the San Diego region.



Significant public outreach was performed in 2017 to provide input into the guidance document, which is tentatively titled the Regional Framework for Climate Action Planning.

In addition, the SANDAG Energy Roadmap Program facilitated a significant amount of “peer-to-peer” networking and information-sharing among local agency staff, SANDAG and SDG&E during 2017. The program established and convened three Subregional Energy Collaboratives (North County Coastal, North County Inland, and East County) and participated in a fourth Subregional Energy Collaborative for the South Bay that is run by Chula Vista through its Local Government Partnership.

Additional successes in 2017 were achieved through the San Diego Regional Energy Partnership (SDREP), a collaboration among SANDAG, the City and County of San Diego, Chula Vista, and the Port of San Diego, to provide additional regionally-focused energy efficiency programming to the San Diego region. In 2017, the SDREP continued to participate in the San Diego Regional Green Business Network website, draft toolkit and draft roadmap, and communicated important energy efficiency programming to additional audiences by incorporating energy efficiency content into the work of the San Diego Regional Climate Collaborative.

SANDAG continued to successfully raise energy efficiency awareness among SANDAG employees in 2017. Several SANDAG employees participated in energy efficiency trainings in 2017, including four employees that participated in classes and passed the exam to become LEED Green Associates. SANDAG also used the agency’s internal employee messaging system to distribute regular, nearly monthly messages on energy efficiency topics to SANDAG employees to help them save energy at work and at home. SANDAG also initiated an update of its internal Green Operations Manual and began preparing for outreach to employees at its 2018 Wellness Fairs.

## **6. SDGE3277 LGP – SEEC Partnership**

### **Program Description:**

The Statewide Energy Efficiency Collaborative (SEEC) is an alliance to accelerate action by California cities and counties to reduce GHG emissions and save energy. The collaborative employs a variety of strategies to catalyze local climate and energy action,

including education and tools for climate action planning, venues for peer-to-peer networking and information sharing, technical assistance to implement, track and assess the progress of cities and counties, and support and recognize the progress of cities and counties participating in the Beacon climate action, energy efficiency, and sustainability program.

**Implemented Strategies:**

The Partnership implemented the following strategies and accomplished the following objectives:

*SEEC Forum* - The Local Government Commission (LGC) organized the 8th Annual Statewide Energy Efficiency Best Practices (SEEC) Forum. The core purpose of the SEEC Forum is to encourage local government staff and officials to commit to energy savings, GHG emissions reduction and accelerated implementation of energy efficiency measures. The Forum also provides opportunities for participants to learn new strategies and best practices to advance climate action efforts in their communities. The Forum is offered at no cost to local government staff and officials to reduce participation barriers.

*Zero Net Energy (ZNE) Hub* - In 2016, the ZNE Toolkit for Local Governments (ZNE Hub) was created, which compiles all existing ZNE resources to provide a “one-stop-shop” for local governments working to advance ZNE policies and implementation in their communities. In 2017, the ZNE Hub was redesigned to ensure that it is easy for web users to navigate and supplemented with relevant resources to keep the ZNE Hub up-to-date. The ZNE Hub is organized into two categories: Introductory Resources and the Local Government Role.

*Energy Calendar* - LGC created and continues to maintain a robust calendar of energy- and climate change-related events to create a streamlined resource for local government staff. In 2017, LGC added over 200 unique webinars, workshops, public meetings, and conferences.

*Annual Participation Survey* - To ensure that the SEEC Program reflects the diverse and often changing needs of local government staff throughout California, SEEC conducted its Annual Participant Survey to gather input on priority climate and energy topics and

trainings of interest. The survey had record-breaking participation with a total of 201 survey respondents completing the full survey.

*Local Government Roundtables* - 2017 also saw the creation of the SEEC Local Government Roundtables to host topic-focused local government peer-to-peer calls to foster sharing and learning among local government staff throughout the state. The Roundtable topics were determined based on interest expressed by SEEC local government participants, which included street lighting retrofits, stakeholder engagement, and climate action planning and implementation. The Roundtables in total have over 50 local government participants that represent nearly all regions of the state. SEEC will continue to provide this service through the Statewide Local Government Energy Efficiency Best Practices Coordinator in 2018.

*Strategic Planning* - LGC served as the lead coordinator for the SEEC partnership in 2017 and organized and facilitated monthly team calls and monthly calls with Non-Governmental Organization (NGO) partners. LGC also organized and facilitated the annual NGO planning meeting and an SEEC team strategic planning meeting. LGC also redesigned the SEEC website to make it for web users to navigate.

## **7. SDGE3278 LPG – Emerging Cities Partnership**

### **Program Description:**

The Emerging Cities Program (ECP) is part of the Local Government Partnership umbrella and is intended to provide local governments additional resources to support and build capacity in engaging in energy efficiency activities that achieve deep, comprehensive energy savings. ECP collaborates with SANDAG's Energy Roadmap Program to provide energy assistance to public entities with energy and sustainability projects and community outreach. Additionally, ECP funds activities supporting municipal codes and standards, education and outreach, implementation of Climate Action Plans (CAP) and Energy Action Plans (EAP), GHG reduction plans, and other sustainable projects. ECP works directly with city staff to reach their council, small-to-medium size business owners, and residents.

### **Implemented Strategies:**

In 2017, the ECP continued to offer support to cities working to lower their energy

usage by providing assistance for the development of CAP and local energy ordinances. In addition, ECP supported the efforts on the part of public sector entities to educate the citizens within their jurisdictions on these energy efforts.

In 2017, ECP leveraged the efforts of SDG&E's other major marketing efforts to ensure that the cities had information on all of SDG&E's programs and how these programs can help support the policy initiatives that the cities have undertaken. These documents, called Clean Energy Plans, outline suggested programs that will help jurisdictions within SDG&E's service territory meet their energy goals.

In addition, ECP supported the efforts of the City of Carlsbad on their Energy Efficiency Ordinance, which once implemented will be an innovative policy requiring energy efficiency audits to be completed for residential and non-residential customers at a given point in time. For residents, the point in time will be when a permit for major upgrades has been issued, and for non-residents it will be when a new business or change of ownership permit has been issued. This effort included a marketing campaign to educate citizens on how they can lower their energy usage via the ordinance.

## **H. Statewide Emerging Technologies Programs**

### **Program Description:**

The Statewide Emerging Technologies Program (ETP) supports the IOUs' energy efficiency programs in their achievements of aggressive objectives through the three subprograms described below. ETP uses multiple tactics to achieve the objectives of the three subprograms. Some of the key tactics are described below, but each tactic may be used to achieve any of the subprogram objectives.

#### **1. SDGE3246 SW-ET - Technology Introduction Support**

### **Program Description:**

The Technology Introduction Support (TIS) Subprogram supports the market introduction of new technologies on a limited scale by implementing Scaled Field Placements (SFP), Demonstration Showcases (DS), market studies, and Technology Resource Innovation Program (TRIP) projects. SFP projects consist of placing a measure at several customer sites with the intent of gaining market traction and feedback. Typically,

these measures have already undergone an assessment or similar evaluation, reducing the risk of failure. DS projects are designed to provide key stakeholders the opportunity to "kick the tires" on combinations of measures that advance Strategic Plan and ZNE goals. DS introduces measures to stakeholders at a system level, in real-world settings, creating broad public and technical community exposure and increased market knowledge. DS are open to the stakeholders and highlight a system's approach that can be applied across the service territory. Market studies are designed to perform targeted research on customer behavior, decision making and market behavior to gain a qualitative and quantitative understanding of customer perceptions, customer acceptance of new measures, market readiness, and potential for new measures. TRIP solicits third party projects (of up to \$300,000) to deploy emerging technologies on a limited scale to the market; these projects are often in collaboration with the utility's energy efficiency programs.

**Implemented Strategies:**

The ETP scanned, screened, and prioritized TIS project ideas in coordination with the energy efficiency programs as well as statewide Emerging Technology Coordinating Council (ETCC) partners. These activities included primary and secondary market research to gain further insight into new technologies and their potential in SDG&E's service territory. An evaluation looking at both water and energy savings associated with soil moisture sensors for agricultural customers was initiated in 2017, along with an evaluation looking at the potential savings from small commercial energy management systems. Additionally, new project ideas were solicited through a TRIP solicitation that was performed in conjunction with the IDEEA 365 Program. Throughout the year, the ET program team attended conferences to share research results with the public and other interested stakeholders. For example, the SDG&E ET Program helped lead a discussion at the Consortium for Energy Efficiency (CEE) Summer meeting, in June 2017, to share best practices for improving the technology transition process from ET to mainstream program offerings.

## **2. SDGE3247 SW-ET - Technology Assessment Support**

### **Program Description:**

Through the Technology Assessment (TA) element of ETP, energy efficient measures that are new to the market (or underutilized for a given application) are evaluated for performance claims and overall effectiveness in reducing energy consumption and peak demand. A key objective of these assessments is the adoption of new measures into SDG&E's portfolio. TA is one of the core strengths of ETP and provides critical support to energy efficiency programs. ET assessments may utilize data/information from different sources, including in site testing (customer or other field sites), laboratory testing, or paper studies. In addition to other findings and/or information, assessments typically generate the data necessary for energy efficiency rebate programs to construct a workpaper estimating energy and demand savings over the life of the measure.

### **Implemented Strategies:**

The ETP scanned, screened, and prioritized TA candidates in coordination with the energy efficiency programs as well as statewide ETCC partners. Project reports were published to the public ETCC website and shared during the quarterly meetings of the ETCC. This year's meetings were held on the topic of commercial buildings on February 28, 2017, industrial technologies on September 20, 2017, and whole home residential approaches on December 6, 2017. In place of one of the quarterly meetings was the 2017 ET Summit covering all customer and technology segments was held April 19 -21, 2017. In 2017, one ET study was successfully converted into a statewide workpaper for ultra-low temperature freezers. Throughout 2017, the ETP worked with the ETCC Advisory Council to develop content for the ET Summit and prepare for the transition to the Rolling Portfolio Business Plan.

## **3. SDGE3248 SW-ET - Technology Development Support**

### **Program Description:**

The Technology Development Support (TDS) Subprogram aids private industry in the development or improvement of technologies. Although product development is the

domain of private industry, there are opportunities for IOUs to undertake targeted, cost effective activities that provide value in support of private industry product development efforts. This support decreases innovator uncertainties and allows the IOUs to have input in the process. ETP looks for targeted opportunities to support energy efficiency product development. Product development is the process of taking an early-stage technology, or concept, and transforming it into a marketable product. ETP uses several activities to support technology developers, including Technology Resource Innovation Outreach (TRIO) roundtables and symposia. TRIO symposia are intended to educate technology developers on the requirements that IOUs must apply to consider new technologies for inclusion in IOU programs. TRIO roundtables are targeted to a smaller audience than symposia and have focused on cost effectiveness, energy management systems, and ET assessments. TRIO provides support and networking for energy efficiency and demand response entrepreneurs, investors, research institutions, and universities. The goal of TRIO is to provide participants with the necessary perspective and tools to work with IOUs and ultimately introduce new energy efficiency measures to the marketplace. In collaboration with the ETCC, the ETP held both a TRIO symposium and roundtable in 2017.

**Implemented Strategies:**

The ETP worked closely with partners, such as the Consortium for Energy Efficiency (CEE), Western Cooling Efficiency Center (WCEC), Electric Power Research Institute (EPRI), Gas Technology Institute (GTI), and the California Lighting Technology Center (CLTC) to provide targeted education, testing, support, and guidance for technology development.

In 2017, a collaborative meeting was held with the CEC Electric Program Investment Charge (EPIC) and Public Interest Energy Research (PIER) programs to focus on collaboration and research alignment with ETP. The ETP also worked with the ETCC to continue support of early stage companies through the Rocket Fund and Department of Energy's (DOE) FLoW (First Look of the West) business plan competition event, which both provide seed funding to help start-ups develop products addressing direct utility needs.



## **I. Statewide Finance Program**

### **1. SDGE3262 SW-FIN – On-Bill Finance**

#### **Program Description:**

The On-Bill Financing (OBF) Program is SDG&E's interest-free, unsecured finance offering designed to facilitate the purchase and installation of comprehensive, qualified energy efficiency measures for non-residential customers, including multifamily property owners or management companies, that might not otherwise be able to act, primarily due to capital constraints. Approved customers that install qualified equipment are eligible to receive a full rebate or incentive from the participating SDG&E programs and to finance the balance of comprehensive, qualified energy efficiency and demand response measures. Customer loans are repaid through a fixed monthly installment on customer's utility bill.

#### **Implemented Strategies:**

SDG&E's OBF Program continues to be a practical and efficient means for customers to install energy efficiency measures they may not otherwise be able to afford. The program provides monthly trade professional training on the OBF process and requirements. The OBF trainings offer a two-way open communication channel between trade professionals and SDG&E's OBF Program staff.

OBF also continues to coordinate with assigned account executives, partnership programs and third party programs to allow financing of approved measures and projects. Staff works closely with assigned accounts by providing outreach and participating in seminars, tradeshow, periodic meetings, and special projects. Financing programs also allow SDG&E to provide the best possible experience for its energy efficiency customers. SDG&E continued its OBF Program in 2017, and, since its inception, has funded over 1,550 loans totaling approximately \$55 million as of year-end 2017, enabling businesses, local governments, and institutional customers to pursue increasing levels of energy efficiency.

## **J. Statewide Codes and Standards Program**

#### **Program Description:**

The Statewide Codes and Standards (C&S) Program saves energy on behalf of ratepayers by influencing regulatory bodies, such as the CEC and the United States



Department of Energy (DOE) to strengthen energy efficiency regulations and standards. The Program conducts efforts to increase compliance with existing C&S regulations to ensure that the state realizes the savings from new C&S, and supports local governments that include reach codes (cost effective local ordinances saving energy beyond code requirements) as a climate strategy. The program also conducts planning and coordination with IOUs statewide to optimize collaboration and code readiness activities to prepare for future codes.

Program advocacy and compliance improvement (CI) activities extend to virtually all buildings and appliances sold in California in support of the state's ambitious climate and energy goals. Support for state and federal building codes and appliances standards continues to move California towards residential ZNE by 2020, non-residential ZNE by 2030, and the statewide goal set forth by Senate Bill 350 (SB 350) to reduce building energy usage by 50 percent by 2030.

**Implemented Strategies:**

The Statewide C&S Program includes five Statewide C&S Subprograms that deliver the C&S strategies in the PIP to meet the state's Strategic Plan, legislation and CEC policy goals. The SDGE3249 – SW C&S Building Codes & Compliance Advocacy (Title 24, Part 6) Subprogram advocates for new or updated sections of California's Building Energy Efficiency Standards and related ASHRAE activities. The SDGE3250 – SW C&S Appliance Standards Advocacy (Title 20/Federal) Subprogram advocates for new appliance efficiency regulations (Title 20), DOE appliance standards and related ENERGY STAR® activities. The SDGE3251 – SW C&S – Compliance Enhancement (Compliance Improvement – CI) Subprogram offers training, tools, and resources to support compliance with existing C&S. The SDGE3252 – SW C&S Reach Codes Subprogram includes development of new cost effectiveness studies and technical support to facilitate local government reach codes. The SDGE3253 – Planning & Coordination Subprogram includes long-term planning and coordination activities to optimize work across the IOUs and stakeholders. The five subprogram strategies are discussed in greater detail below.

## **1. SDGE3249 SW-C&S – Building Codes & Compliance Advocacy**

### **Program Description:**

The Building Codes Advocacy Subprogram primarily targets improvements to California’s Building Energy Efficiency Standards (Title 24, Part 6 or Standards). Title 24, Part 6 is updated by the CEC on a triannual cycle. The subprogram also pursues changes to national building codes that impact California through ASHRAE and other national and international code-setting bodies. 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 referenced in Title 24 (e.g., the National Fenestration Rating Council and the Cool Roof Rating Council) for both Part 6 and Part 11 (CALGreen).

### **Implemented Strategies:**

In 2017, the IOUs supported the CEC’s 2019 rulemaking by developing 40 building code proposals contained in 23 Codes and Standards Enhancement (CASE) Reports (some reports contained multiple proposals). The 2019 CASE Reports are available online at: <http://title24stakeholders.com/2019casetopics/>.

## **2. SDGE3250 SW-C&S – Appliance Standards Advocacy**

### **Program Description:**

The Appliance Standards Advocacy Subprogram targets both state and federal standards and tests methods, including improvements to Title 20 by the CEC, and improvements to federal appliance regulations and specifications by the DOE, Environmental Protection Agency (EPA) ENERGY STAR Program, ASHRAE and the Federal Trade Commission (FTC). Advocacy activities include developing Title 20 code enhancement proposals, participating in the CEC public rulemaking process and ASHRAE committees, submitting comment letters in federal standards proceedings, and participating in direct negotiations with industry. Additionally, the program monitors state and federal legislation and intervenes as appropriate.

### **Implemented Strategies:**

One of the most far reaching appliance standards in recent years, a minimum 45

lumens per watt efficacy standard for all general service lamps (GSLs), regardless of technology, took effect in California for all lamps manufactured after January 1, 2018. This effectively outlaws incandescent general service "A" lamps. The National Electrical Manufacturers Association (NEMA) sued for an injunction against California implementing this standard and setting higher standards for general service and small diameter directional LED lamps. In *NEMA vs. CEC*, the United States District Court ruled in favor of the CEC, which cleared the path for the CEC to enforce the GSL standard. A similar standard is to take effect nationwide in 2020. California's experience with the incandescent ban will be watched closely by other states and the federal government.

The program advocated for changes to Title 20 appliance standards through various efforts. For example, the program participated in a multitude of CEC webinars and workshops. From this activity, CASE Reports were developed for products such as spray sprinkler bodies, irrigation controllers, commercial and industrial fans and blowers, expanded general service lighting definition, solar inverter roadmap, set top box roadmap, tub spout diverters, low power mode and power factor roadmap, commercial clothes dryers, portable spas, and pool pumps.

The program advocated for changes to federal appliance standards through various efforts, researched and responded to specific issues related to federal rulemaking and specification processes conducted by the DOE and EPA ENERGY STAR, and participated in stakeholder meetings during rulemakings and specifications processes, which resulted in ten rulemaking advocacy letters issued in 2017. Additionally, the program participated in DOE's Appliance Standards and Rulemaking Federal Advisory Committee meetings with DOE, industry and other stakeholders.

The DOE standards finalized in 2017 included walk-in coolers and freezers, portable air conditioners, uninterruptible power supplies, air compressors and packaged boilers.

The IOUs responded to six Energy Star rulemaking workshops including computer specifications, pool pump specifications, audio video specifications, television specifications, automatic commercial ice machine specifications, and uninterruptible power supply specifications.

The IOUs participated in two Air-Conditioning, Heating and Refrigeration Institute (AHRI) test method development activities: (1) AHRI 1250 - Rating Method for Walk-in Coolers and Freezers; and (2) AHRI 1230 - Rating Method for Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment.

### **3. SDGE3251 SW-C&S – Compliance Enhancement**

#### **Program Description:**

The Statewide C&S Program supports increased compliance with the Building Energy Efficiency Standards and the Appliance Standards after they are adopted. The Compliance Enhancement Subprogram was renamed the Compliance Improvement (CI) Subprogram. The subprogram activities complement advocacy work by maximizing verified savings from C&S activities that are realized and persist over time. The CI Subprogram targets market actors throughout the entire compliance chain, providing education, outreach, and technical support to improve compliance with both building and appliance energy standards. Achieving satisfactory compliance with C&S is a crucial requirement for capturing the intended energy savings for the long-term benefit of society. High compliance rates are necessary to level the playing field for well-intentioned suppliers and contractors who are otherwise faced with a competitive disadvantage when complying with regulations. Greater compliance strengthens voluntary program baselines and provides a solid foundation for future robust advocacy efforts.

#### **Implemented Strategies:**

The CI Subprogram launched a new, easy-to-navigate version of EnergyCodeAce.com. The updated website allows easier navigation from all computers and smart devices. Additionally, the website allows access to Title 20 and Title 24 online and classroom compliance trainings, tools, resources, outreach, and Certified Energy Analyst support. The training team delivered more than 120 Title 24, Part 6 Standards-related traditional and virtual classroom training sessions, 20 Decoding Talks, launched a new Code & Coffee live stream series, and created a new learning block series in support of Certified Energy Analysts. A number of new resources and tools were added to the Energy Code Ace library such as the Lighting Wheel and fact sheets on computer and lamp

regulations, while the Title 20 standards were incorporated into the Energy Code Ace library - Reference Ace. Additionally, the CI Subprogram continued development of new dynamic compliance forms in close collaboration with the CEC and designed a prototype of a user interface that industry will soon use to complete the new forms. The CI team represented all of the subprogram offerings and gathered feedback at over 55 industry events throughout the state.

The CI Subprogram worked on enhancing the traditional Title 24 Building Codes training through the Residential Standards Essentials course for plans examiners and building inspectors, making it far more activity-based and less lecture intensive. A blended learning series for the Title 24 Building Codes was delivered in various formats including Energy Code Ace's self-study courses, virtual workshops, and mentoring. The CI Subprogram worked on redesigning the Energy Code Ace website. The new Title 20 section of the Energy Code Ace library - Reference Ace was developed. This fully incorporated Title 20 into the overall Energy Code Ace website. Additionally, the CI Subprogram worked on transitioning the Certified Energy Analyst exam administration to California Association of Building Energy Consultants while supporting exam revisions as needed.

#### **4. SDGE3252 SW-C&S – Reach Codes**

##### **Program Description:**

In addition to state and national building codes, the C&S Program provides technical support to local governments that wish to adopt ordinances that exceed statewide Title 24, Part 6 minimum energy efficiency requirements for new buildings, additions, or alterations (reach codes). Reach code support for local governments includes research and analysis to establish performance levels and cost effectiveness relative to Title 24, Part 6, by climate zone. Reach code support also includes drafting model ordinance templates to encourage regional consistency, assisting with completing and expediting the application process required for approval by the CEC, and supporting implementation once effective. The subprogram supports local governments seeking to establish residential or commercial energy conservation ordinances for new construction and existing buildings.

### **Implemented Strategies:**

Many local jurisdictions have established goals within their Climate Action Plans to reduce energy use and GHG emissions from buildings through adopting and implementing local energy ordinances. Given the changing policy and funding priorities at the federal level, cities, and counties are experiencing a greater sense of urgency for local action to meet the state's GHG emission reduction goals. This urgency has translated to a greater interest in reach codes as a path to achieve the goals. With reducing GHG emissions as the highest priority, there is a shift in focus from reducing energy use generally to specifically reducing energy use associated with carbon emissions. This shift has resulted in an increased level of interest in all electric designs, both at the local level and at the state level.

The Reach Code Subprogram completed the following cost effectiveness studies: (1) CALGreen Tiers 1 and 2 for All-Electric Residential New Construction; (2) CALGreen Tier 3 for Residential New Construction; (3) CALGreen Tier 1 for Nonresidential New Construction; and (4) for the City of Chico, a study covering significant renovations in existing single-family homes.

The subprogram began development of a residential new construction study requiring heat pump water heating plus a PV system sized to offset the water heater electricity usage. The subprogram also responded to requests from the Town of Portola Valley, Brisbane, and others to revise the RNC (Residential New Construction) report to include additional solar-ready requirements.

The Reach Code Subprogram provided technical support to staff at several jurisdictions including presentation of cost effectiveness studies, consultations on options and opportunities, review and recommendations regarding proposed ordinance structure, triggers and language.

Several reach codes were adopted by local jurisdictions and approved by the CEC, based on the IOUs' cost effectiveness studies. Approved local ordinances may be found on the CEC's website: <http://www.energy.ca.gov/title24/2016standards/ordinances/>.

## **5. SDGE3253 SW-C&S – Planning Coordination**

### **Program Description:**

The planning element of the Planning Coordination Subprogram includes long-term planning and scenario analyses, modeling of impacts from potential program activities relative to California policy goals and incentive programs, development of business and implementation plans, responses to CPUC and other data requests, and maintenance of a C&S savings database consistent with evaluation protocols.

### **Implemented Strategies:**

The coordination element includes internal and external harmonization with other groups. Internal activities have traditionally included collaboration with several departments: (a) incentive, training and demand response programs; (b) policy, regulatory and corporate affairs; and (c) emerging technology and product teams. More recently, as building codes have begun to incorporate distributed generation and batteries, coordination has expanded to strategy integration, distributed generation programs, and others involved in grid optimization and management.

Since C&S impacts the entire state and almost all building types, occupancy categories and related technologies, external harmonization activities encompass: a) CPUC, CEC and Air Resources Board; b) other IOUs, municipal utilities, and utilities in other states; c) national advocates such as Appliance Standards Awareness Program (ASAP), National Resources Defense Council (NRDC), National Energy Efficiency Alliance (NEEA), Sierra Club, American Council for an Energy-Efficient Economy (ACEEE), Earthjustice, National Consumer Law Center, and Consumer Federation of America; d) representatives of various manufacturing companies and industry groups such as Association of Home Appliance Manufacturers (AHAM), Consumer Technology Association (CTA), National Electrical Manufacturers Association (NEMA), American Gas Association (AGA); e) water utilities and local governments; and f) building inspectors, Title 24 consultants, Contractor State Licensing Board (CSLB), etc.

The program impacts energy efficiency, PV, storage technologies, utility grids, building and manufacturing industries, the CI supply chain, energy efficiency and demand



response programs, local governments, state and national code setting bodies, ratings organizations, etc. Planning and coordination are challenging. The program is working to implement solutions to coordinate logistics for the future.

## **K. Statewide Integrated Demand Side Management (IDSM)**

### **1. SDGE3260 Local-IDSM-ME&O – Local Marketing (EE)**

#### **Program Description:**

SDG&E's 2017 IDSM Marketing, Education and Outreach (ME&O) efforts continued to focus on the benefits of comprehensive DSM programs for residential and small-medium business (SMB) customers.

The ongoing objective of local ME&O efforts is to funnel customers from awareness of SDG&E's broad portfolio of IDSM programs to interest in learning more, and ultimately to participating in relevant programs that best meet their needs. This was accomplished by promoting the increased impact that an integrated approach can have overall, with segmented offers to increase interest in specific, comprehensive programs across SDG&E's energy efficiency and demand response portfolio.

SDG&E developed ME&O strategies, messages, and materials that increased customer exposure to, and understanding of, DSM programs and provided ongoing education through a variety of social media channels to meet customers where they are and provide high value solutions for their specific needs.

Local IDSM ME&O activities supported awareness, interest and participation goals primarily through the following two strategies:

- Direct outreach and customer engagement complemented by partnerships with key third party organizations
- Broad awareness campaigns supported by targeted ME&O efforts

#### **Implemented Strategies:**

In 2017, SDG&E's Outreach team participated in more than 1,600 community activities including events, presentations, and workshops that promoted holistic energy-saving solutions to customers. The goal of these activities was to offer a variety of comprehensive solutions in combination, including energy efficiency, demand response,



and/or distributed generation programs, rather than only offering single solutions, one at a time.

### Residential Outreach

Residential outreach efforts to promote residential IDSM measures often centered around recurring key initiatives, such as the SDG&E Branch Office Tailgate series, local home improvement shows, safety and emergency preparedness events, health and wellness fairs, multicultural community events, earth fairs at major employer work sites, community sustainability events, and programming at libraries and Cool Zone sites.

One of the most effective methods SDG&E uses to educate residential customers about energy-saving solutions is through numerous partnerships with a diverse group of community-based organizations (CBOs). The organizations that make up SDG&E's Energy Solutions Partner Network reach a wide variety of customers in unique and engaging ways. Throughout the year, the Energy Solutions Partner Network distributed online and social media messaging that included information about behavioral tips, residential rebates and incentives, home upgrade program, Cool Zones, and My Account tools and energy use alerts. The social media links lead customers to My Account to learn more about their energy use and to solutions like SDG&E's Marketplace, featuring rebates on the purchase of select energy-efficient equipment and appliances. In addition to the social media messaging, the outreach team works closely with the Energy Solutions Partner Network to present updated SDG&E Residential IDSM program updates to their members throughout the year to ensure they are aware of program changes.

In 2017, SDG&E held two Energy Solutions Partner Roundtables. These events brought together various partners to network with one another and receive updates on SDG&E programs and initiatives. While residential energy programs and services are the main focus of the event, the outreach team presents other relevant topics including rate reform, EcoChoice, CARE, the "Do Your Thing" campaign from Energy Upgrade California (EUC), Cool Zones, and summer preparedness.

SDG&E hosted the "Beat the Heat" Cool Zone Kick-Off with attendees from various partner organizations. Cool Zone locations received the latest information on rate reform

and residential energy efficiency programs, while participants were given the chance to brainstorm with other Cool Zones on ways to bring visibility to their locations and SDG&E offerings. Cool Zones are established by the County of San Diego Aging and Independence Services (AIS) and are open to the public every year from May to October. There are more than 100 Cool Zones in senior centers and other public buildings that provide service to some of the hottest areas in the San Diego region. The outreach team works with these Cool Zone partners to leave behind residential energy efficiency program marketing material for anyone that comes into one of the centers.

#### Business Marketing & Outreach

SDG&E's Outreach team worked closely with SDG&E's Small-Medium Business (SMB) team early in the year to promote comprehensive IDSM solutions to customers who were experiencing higher bills on their new time of use rates. As with residential, the outreach team has several key business and trade associations, chambers, and local government partners that are a part of the Energy Solutions Partner Network. All of the Energy Solutions Partners help to encourage participation in SDG&E's IDSM programs through collaboration packages. Collaboration packages were developed with communication tools including sample tweets, Facebook posts, e-newsletter, and website articles all highlighting SDG&E's IDSM Programs. The Energy Solutions Partners helped spread information to local business customers about available rebates and incentives, Building Envelope Program, Business Energy Analyzer, On-Bill Financing, My Account tools and alerts, the Trade Professional Directory, and more. The Business Outreach team worked closely with their partners throughout the year to give presentations on updates to the IDSM programs, pricing and billing plans.

The Major Customer Advisory Panel (MCAP) provided quarterly updates to the largest commercial customers on topics such as regulatory decisions, rate changes, and programs, including IDSM. 2017 kicked off with a tour of San Diego's downtown LEED Silver Central Library showcasing the building's architecture and many sustainable features. The Central Library field trip was hosted by the City of San Diego, SDG&E's Grand Energy Champion winner in 2015. A new roundtable component was introduced and the

membership engaged in a deep-dive discussion on demand response, which included best practices used at their companies, enabling technologies, and the challenges of demand response program participation. SDG&E's senior management, marketing representatives, and program managers were onsite to facilitate the conversations and share the results.

#### BioCom Workshops

SDG&E Outreach partnered with Biocom to offer a new series of complimentary energy efficiency related workshops catered to the life science industry. With more than 950 members and a local San Diego presence, Biocom harnesses the collective power and experience of innovative, productive life science clusters globally, with advocacy and programs to help companies in their quest to improve the human condition. In Q3, Biocom and SDG&E offered a series of workshops covering topics such as sustainable strategies, lighting controls, and smart investment strategies for long-term energy savings. Attendees received a certificate in 'Energy Savings for Life Science Facilities' from SDG&E during an informal Biocom ceremony, which could be brought back to their employers.

#### 2017 Energy Showcase

In front of more than 300 guests, business customers, and local officials, SDG&E celebrated eight Energy Champions at the annual Energy Showcase event at the San Diego Convention Center. These business customers were recognized for implementing comprehensive energy solutions for their businesses, helping them be more cost and energy efficient. The Showcase provides an opportunity to inspire customers to become future award winners and highlight the importance of SDG&E's energy efficiency, demand response, emerging technologies, renewable, and clean transportation programs. Sharp Healthcare took home the top prize as the 2017 Grand Champion.

Other winners included San Diego Unified School District (Education K-12), Hollywood Casino (Entertainment), Marriott Marquis San Diego (Hospitality), CP Kelco (Manufacturing), San Diego Food Bank (Non-Profit), Añejo Bar & Grill (Small & Medium Business) and San Diego Ice Arena (Sports Venue). Along with the awards, the Energy Showcase featured a special guest appearance by San Diego Mayor Kevin Faulconer, followed by a moderated keynote panel of energy experts who discussed:

- The importance and future of energy efficiency, sustainability, and greenhouse gas reductions
- Role of big data and new technologies that may revolutionize the energy industry
- San Diego's leadership in these important areas
- Best practices and innovation in energy

#### Partner Organization Spotlight

The Balboa Park Cultural Partnership (BPCP) protects Balboa Park's natural, cultural, and historical resources while improving the economic viability of one of San Diego's oldest public spaces. BPCP leverages a diverse array of partners, including SDG&E, to achieve the core objectives of advancing sustainability in literacy, practice, and leadership. SDG&E supported BPCP efforts with IDSM ME&O funding to expand exposure of energy efficiency, demand response, distributed generation, clean technology, and electric/water conservation. BPCP continued to be an exemplary representative of IDSM in action and expanded their efforts in 2017 to increase overall visitor awareness and continue to make comprehensive upgrades to park facilities. 2017 BPCP highlights include:

#### *Sustainability Literacy*

- Conducted eight educational/outreach events, engaging 1,295 people on IDSM topics
- Issued two Sustainability Facility Professional Scholarships and conducted six Sustainability Walk-About Tours
- Issued sustainability awards for three outstanding projects: Balboa Park Conservancy's Tree Balboa Park Project, San Diego Natural History Museum's Passive Climate Control, and the San Diego Zoo's Zero Waste Initiative

#### *Sustainability in Practice*

- Continued developing and expanding relationships with more than 75 active partner organizations to increase their impact on the community and get IDSM or sustainability projects done in the park
- Nine buildings incorporated low flow and water efficient fixtures

- Reduced electricity usage by nearly 25,000 kWh and saved more than 1.9 million gallons of water
- Diverted ~4,600 items from the landfill through the Excess Capacity Program
- Offset Carbon Usage by 18MT and obtained recognition of 10 LEED Certified buildings in Balboa Park

#### *Sustainability Leadership*

- Received the American Alliance of Museums (AAM) PIC Green Sustainability Excellence Award
- Created the Park Sustainability Index™ as a benchmarking and communications platform to compare sustainability successes among urban parks and cultural destinations across the US
- Recruited 55 Park Sustainability Index Participants
- Engaged 11 Green Museum Accord Participants and presented the Balboa Park Case Study at the Statewide Energy Efficiency Collaborative Forum

#### Awareness Campaigns and Targeted ME&O

##### *RYU Thermostat - Small Customer Technology Deployment (SCTD)*

SDG&E's energy efficiency rebate for smart thermostats saw moderate growth through October of 2017 until the instant, point-of-sale validated rebate launched mid-November and the number of issued rebates increased significantly. The campaign started during the week of Black Friday and a series of emails were distributed for the rest of 2017. The \$50 thermostat rebate was increased to \$75 during the promotion time-period. The offer also had an instant rebate component with Lowes stores and Nest (Lowe's and Nest online purchases also qualified for the instant rebate). This promotion included the Reduce Your Use<sup>SM</sup> Rewards offer as well. Work is being done with thermostat manufacturers to follow up with customers who received the energy efficiency rebate to ensure those customers are aware of demand response solutions as well. SDG&E achieved its 2017 goal of installing approximately 2,000 free thermostats and far exceeded its 2017 goals of enrolling 3,000 accounts in the "bring-your-own-thermostat" (BYOT) offer by enrolling 6,800 accounts in the program. A BYOT commercial offer, in which SDG&E offers an

incentive to customers, who purchase their own thermostat, and agree to allow SDG&E to adjust the thermostat's setting during demand response events, was approved by the CPUC to begin in 2018. SDG&E will continue to leverage existing energy efficiency programs to promote this offer.

#### *Business Resource Savings & Solutions*

In 2017, SDG&E completed a major project – the launch of the new Business Resource to Savings & Solutions ([sdge.com/BizRes](http://sdge.com/BizRes)). This resource lists all solutions and savings for commercial and industrial customers, but also serves as a resource for account executives, the Business Contact Center and field service representatives to easily present, download files and send savings solutions to customers. In addition, this resource saves money by taking the old Business Guide to Savings booklet and moving it to the digital arena. It will be included in the welcome packet for businesses in 2018, and will be made into individual cards to facilitate a more efficient revision process based on changes to individual programs. Business marketing communications carried out major cross-promotional pushes for Energy Efficiency Business Rebates, Business Energy Advisor Online Tool, Technology Incentives Program, Smart Thermostat Program, Small Business Real Time Energy Manager and Business Energy Solutions Program via radio, digital properties, collateral, emails, direct mail, and social media to drive customer interest.

## **2. SDGE3261 Local-IDSME&O – Behavioral Programs (EE)**

### **Program Description:**

The purpose of this program is to increase customer awareness of their energy use and motivate them to take actions, which can include usage-based or equipment-based changes in behaviors, as well as increased participation in existing and future energy efficiency or demand response programs.

This program leverages comparative energy use reports delivered to residential customers by U.S. Mail, email, web portal, or any combination of the three channels, to achieve greater customer awareness and energy savings. The provided information may include the following:

1. A normative comparison contextualizing a household's energy use against that of a set of neighbors with similar attributes.
2. A personal comparison showing the household its energy use over time.
3. Energy efficiency and demand response recommendations comprised of tips and program promotions.

This program was also leveraged to deliver integrated energy efficiency and demand response program offers to the participating customers. Traditional economic models are based on price and information to drive rational choice, yet customers are still not adopting energy efficiency and demand response when it is clear they can save money. The theory underlying comparative energy usage programs is that by providing customers information about their behavior through a comparison of their household's energy use to that of similar households, along with relevant tips and offers, customers will modify behaviors and undertake actions and/or make energy efficient product purchases that result in energy savings. This program helps address the barrier that prevents customers from acting even when it makes economic sense through the use of behavioral components such as feedback, social approval and goal setting.

#### **Implemented Strategies:**

The program successfully reached the designated customer base in the deployment of the Home Energy Report expansion, which resulted in approximately 600,000 customers being auto-enrolled. The program results include electricity and natural gas savings and serves as an entry point to additional services, including an online audit resulting in approximately 1,975 completed audits in 2017 – adding to the number of audits completed on customers who log into their My Account. The HER online platform, which is available to all residential customers, provides a number of services including neighbor comparison, advanced metering data, additional recommendations and tips, creating a plan on what they can do to save, view their home energy usage in more detail, receive additional information on their home profile, and participate in the points and rewards program. The points and rewards component of the platform offers customers points when energy is saved or when energy efficient action is recorded in portal. Customers can then redeem

their earned points. The points and rewards component of the platform is available to all SDG&E residential customers. Enrollments in points and rewards doubled during 2017, resulting in a total of over 8,700 customers earning rewards.

### **3. SDGE3282 SW-IDSMS – IDSMS**

#### **Program Description:**

The state's Strategic Plan recognizes the integration of DSM options including energy efficiency, demand response, and distributed generation as fundamental to achieving California's strategic energy goals. To support this initiative, the IOUs identified IDSMS as an important strategic DSM policy priority and proposed a series of activities, pilots and other programs in response to the Strategic Plan DSM Coordination and Integration Strategy.

An IOU and CPUC Energy Division statewide IDSMS 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 CPUC D.09-09-047 which are as follows:

*Directive 1* - Development of a proposed method to measure cost effectiveness for integrated projects and programs, including quantification and attribution methods that includes GHG and water reductions benefits and the potential long-term economic and electric/gas hedging benefits.

*Directive 2* - Development of proposed measurement and evaluation protocols for IDSMS programs and projects.

*Directive 3* - Review IDSMS-enabling emerging technologies for potential inclusion in integrated programs.

*Directive 4* - Development of cross-utility standardized integrated audit tools using PG&E's developed audits as a starting point.

*Directive 5* - Track integration pilot programs to estimate energy savings, document 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 (e.g., EM&V and cost benefit results).



*Directive 6* - Develop regular reports on progress and recommendations to the CPUC.

*Directive 7* - Organize and oversee internal utility IDSM strategies by establishing internal integration teams with staff from energy efficiency, demand response, distributed generation, marketing, and delivery channels.

*Directive 8* - Provide feedback and recommendations for the IOUs' integrated marketing campaigns including how the working group will ensure that demand response marketing programs approved as Category 9 programs are coordinated with energy efficiency integrated marketing efforts.

**Implemented Strategies:**

*Directives 1 and 2* – Further efforts on integrating cost effectiveness and EM&V methodologies are being addressed in the Integrated Distributed Energy Resources (IDER) proceeding.

*Directives 3 and 5* - The statewide IDSM Task Force tracked multiple integrated emerging technologies and reviewed various programs, projects, IDSM pilots, and activities to identify integration efforts and opportunities, as well as to develop best practices.

*Directive 4* - The Statewide 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 IOUs created online integrated audit tools for residential and small to medium size business customers with customized audit recommendations based on customer profiles, operating characteristics, market sector potential and cost effectiveness. The IOUs also enhanced existing integrated tools to include solar-related functionality. The IOUs continue to offer onsite integrated audits to small, medium, and large customers.

*Directive 6* - The California IOUs submitted four joint quarterly reports for 2017, 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 the California Energy Efficiency Statistics Data Portal (EESTATS).

*Directive 7* - The statewide IDSM Task Force held regular coordination phone calls to continue to ensure alignment across the state and discuss lessons learned.

*Directive 8* - Delivery of IDSM marketing continues to be more than just promotion of multiple programs within specific tactics like collateral or websites. It is a key component in the planning phases of integrated ME&O to help provide the right solutions to the right customer, at the right time. The IDSM Task Force tracks, reports, and shares best practices related to local integrated marketing campaigns for residential and business customers.

SDG&E-specific IDSM highlights include the following activities:

Emerging Technologies (ET) continued to review a variety of products that could serve IDSM in the future. ET completed final reports for OpenADR 2.0 A/B Evaluation, CSI Low Cost Solar PV Demonstration, HVAC Whole System Upgrade, Advanced Lighting Controls Market Characterization and Low Temp Refrigeration Phase Change Materials. The ET department identified and/or integrated the following emerging technologies: Demand Side Management and Demand Response with Batteries; Connected Home Energy Management System; Phase Change Materials Insulation Tech Assessment; Dynamic Air Balancing for Commercial HVAC Systems; and ZNE Case Study Volume 3.

SDG&E provided over 8,300 residential integrated audits and over 2,000 non-residential integrated audits covering small, medium, and large customers.

SDG&E continued the demand response enabled programmable communicating thermostats to both residential and commercial customers, the Home Energy Reports program, and the expanded SDG&E Marketplace allowing customers to quickly and easily shop for energy saving products and services offered by third party retailers.

SDG&E's 12<sup>th</sup> annual Energy Showcase honored eight San Diego business that were named "Energy Champions" for their investment in and commitment to sustainability and energy efficiency.

Integrated marketing campaigns and collateral continued throughout the year for business and for residential and smaller business customers. The Outreach team continued

to share information and offer comprehensive solutions to customers from all customer segments.

## **L. Statewide Workforce Education & Training**

### **1. SDGE3254 SW-WE&T – Centergies**

#### **Program Description:**

The Workforce Education & Training (WE&T) Centergies Subprogram is made up of seven IOU Energy Centers targeting specific market segments, including food service, commercial, and residential sectors. Centergies focuses on skills and market development trainings, technical consultations, outreach events, and building performance tool loans. The Energy Innovation Center represents the largest component of this program and provides training courses, seminars, workshops, clean energy technology demonstration, equipment efficiency testing, and interactive training exhibits, and lectures to promote industry trends and developments for advancing energy efficiency as a professional discipline.

#### **Implemented Strategies:**

SDG&E's WE&T Program continues to offer certification trainings and certificate programs by offering exam prep workshops in various formats such as online, classroom, and field. The Building Performance Institute's Building Science Principles & Building Analyst, HVAC Excellence, Building Operator Certification, North American Technician for Excellence, Green Building Certification Institute, Certified Energy Manager, and the Home Energy Rating System are exam prep trainings that were offered in 2017.

SDG&E collaborated with BioCom to offer three customized educational seminars. BioCom provided a certificate to their employees who completed all three. They were held as lunch and learns, were two hours each in length, and held in September and October at the BioCom facilities. Approximately 50 students attended the seminar series where the focus was on facility management, lighting controls, and sustainability.

SDG&E offered a home energy rating system certification course to home performance professionals that provided an overview of the California Home Energy Rating System(HERS) Program. Students received an overview of the Field Verification and

Diagnostic Testing Rater certification process and learned the importance of the C&S that define the California HERS Program. This course also teaches students important energy fundamentals and provides an overview of HVAC systems.

SDG&E continued to offer a series of seminars and trainings catered toward Trade Professionals that provided an in-depth understanding of available utility incentive and rebate programs. The series offered hands-on assistance on the energy efficiency project submittal process and incentive payment requirements.

SDG&E continued its partnership with the Center for Sustainable Energy (CSE) and the San Diego County Water Authority to offer homeowner workshops at its Energy Innovation Center. The WE&T staff collaborated with the Customer Generation department to provide time of use and interconnectivity information at each solar workshop. Over 800 homeowners participated in the solar, solar water-heating, and water-wise landscape workshops.

SDG&E continued to collaborate with the National Electrical Contractors Association (NECA) and the Associated Builders and Contractors, Inc. to offer trainings on Title 24, Energy Management, Air Sealing & Insulation, and Commercial Refrigeration. The various groups have provided positive feedback about the caliber of the training instructors. These organizations also help promote other types of educational seminars/trainings to their members and provide feedback when new energy efficiency trainings are of interest or are needed for their members.

SDG&E also offers a food service component that includes a demonstration kitchen at the Energy Innovation Center. Commercial food service operators can watch an equipment demonstration or test their menu concept on energy efficient equipment prior to purchasing. In addition to the hands-on demonstrations, educational seminars are provided and offer knowledge on energy- and water- efficient technologies and practices to reduce energy use in commercial kitchens. For the first time, Islands Restaurant hosted a food safety training class for their entire management and cooking staff at SDG&E's facility. An estimated 73 demonstrations, six consultations, and seven seminars were offered engaging over 300 participants.

A new multifamily operations and maintenance training was developed to specifically target the property management of multifamily apartment complexes. Property management staff was trained on how to use and maintain the operations and maintenance binder documents, benchmarking to monitor building energy use, identifying systems and equipment that needs commissioning, and how to identify opportunities to reduce energy use and how to implement system and equipment updates. The Property Management staff also received hands-on experience with common systems, learned how to review operating conditions and adjust set point controls to maximize efficiency, and identified the performance of building equipment and established a process for preventive maintenance to ensure maximum system performance. They also learned how to best engage tenants to join the community in smart resource use and conservation and became familiar with all proven techniques that change tenant behavior to reduce energy use. A Multifamily Impact Study was completed and recommendations are being reviewed for future implementation at WE&T seminars.

The Resource Lending Library loaned an estimated 705 books and tools and added nearly 100 new customers to the resource library data base. A Tool Lending Library Impact Study was completed and recommendations will be implemented. SDG&E is also working jointly with the IOUs to implement a new software to manage the books and tools.

SDG&E worked with USNRG, Inc. to develop a customized Building Performance Institute (BPI) training for veteran students. The course material was customized for students that required additional time on the field training portion. This course usually targets home performance contractors who typically do not require as much field training time because of their current level of on-the-job experience. After taking the training, several of the veterans obtained or were offered jobs/internships in the home performance field.

SDG&E partnered with various workforce development organizations, such as San Diego Workforce Partnership (SDWP), Goodwill, and Urban Corp, to target disadvantaged workers. Urban Corp offered hands-on trainings to their students between the ages of 18 to 26 to maintain the Center's demonstration garden. WE&T staff worked directly with

SDWP and Goodwill to recruit disadvantaged workers to attend certification trainings in Home Performance and certificate programs in Energy Efficiency Sales.

WE&T staff collaborated with SDG&E's Business Services Department to offer a targeted workshop on Compressed Air Systems. Approximately 27 business customers attended.

## **2. SDGE3255 SW-WE&T – Connections**

### **Program Description:**

The WE&T Connections Subprogram seeks to promote energy efficiency and energy/green sector career awareness along all educational paths (levels) from K-12 to post-secondary. The Connections Subprogram achieves its energy efficiency educational goals by facilitating energy efficiency strategic planning and educational programming at all educational paths. The subprogram infuses the energy efficiency, demand response, and relevant career messages through interactive curricula and educational materials, student assemblies and teacher workshops. As appropriate, curricula and educational materials are correlated to the California Department of Education's content standards.

### **Implemented Strategies:**

SDG&E helps engage the next generation of energy-related workers through supporting energy education and outreach. Approximately 9,000 students were reached at K-12 schools. Over 75% of the schools participating are Title-1, supporting opportunities for disadvantaged students. In 2017, over 1,000 students from 20 schools participated in student events held at the Energy Innovation Center, bringing students onsite to learn about energy efficiency and green career awareness. Participating students scored higher on post-test, knowledge-based questions.

## **3. SDGE3257 SW-WE&T – Strategic Planning**

### **Program Description:**

The WE&T Strategic Planning and Implementation Subprogram provides the statewide framework for planning, coordinating and implementing WE&T activities and recommendations to meet the WE&T goals in the state's Strategic Plan. In addition, and as appropriate, this subprogram addresses the WE&T recommendations in the Needs

Assessment for energy efficiency, distributed generation, and demand response. Planning and implementation efforts include facilitating the transition of pilot programs at local and statewide level, managing and incorporating new and best practices, and monitoring and recalibrating efforts to ensure attainment of planned outcomes.

**Implemented Strategies:**

In 2017, no major activities were planned for the Strategic Planning Subprogram in anticipation of the WE&T Strategy Program changes as articulated in SDG&E's Business Plan application. In August 2017, program funds were shifted to the WE&T Connections Program to cover program activities through year-end 2017.

**M. Third Party Programs**

**1. SDGE3211 (3P) Local-CALS - Middle Income Direct Install (MIDI)**

**Program Description:**

The Middle Income Direct Install (MIDI) Program provides direct install energy efficiency services to customers that meet income eligibility criteria (201-300% of Federal Poverty Level) within SDG&E's service territory. This generally hard to reach segment was provided a range of energy efficient measures at no cost to the customer.

**Implemented Strategies:**

In 2017, the MIDI program launched a Family Electric Rate Assistance (FERA) email campaign intended to capitalize on synergies between FERA and MIDI. FERA is a rate that serves a similar population to those served by MIDI. MIDI also relied on the approximately 450 leads (customers exceeding eligibility requirements) provided through the Energy Savings Assistance (ESA) Program. These efforts increased program participation by almost 245% from 2016. Despite these efforts, MIDI did not meet the program goals in 2017, in part due to a lack of program awareness by qualifying customers. For example, there is often a perception that utility direct install programs are exclusively for lower income households. MIDI-qualifying customers sometimes overlook the program for that reason. As SDG&E looks to further coordinate with low income programs and consolidate vendors across energy efficiency and low income, it is anticipated penetration will improve as a result of having a single touchpoint. SDG&E is looking to identify alternatives to



improve penetration in 2018. In some cases, SDG&E may be able to leverage the same implementer for the successful MFEER, CMHP, and ESA programs. This program approach offers customers a more seamless service model and enables SDG&E to identify hard to reach customers that qualify for the MIDI Program.

## **2. SDGE3212 (3P) SW-CALS - Residential HVAC-QI/QM (AC Quality Care)**

### **Program Description:**

The Quality Maintenance and ENERGY STAR Quality Installation Programs continued under the name “AC Quality Care.” The AC Quality Care Program targets residential customers in SDG&E’s service territory with air-cooled refrigerant-based (known as “direct expansion” or “DX”) air conditioning improvements that follow the procedures and protocols adopted by the Statewide Residential Quality Maintenance (QM) and Residential Quality Installation (QI) Programs. These programs are developed in accordance with the QM and QI standards developed by the Air Conditioning Contractors of America (ACCA) and approved by the American National Standards Institute (ANSI), and QI meets the requirements of the ENERGY STAR HVAC Quality Installation Program.

### **Implemented Strategies:**

The Residential HVAC-QI/QM met and exceeded its 2017 program savings goal. The program continued to work with QM contractors from the previous program year to improve customer follow ups and address post-contractor referrals. Additionally, the program added requirements to QI related to adherence to code. This continued verification of the permitting process ensured the quality of work performed, persistence of savings and customer safety. Lastly, training materials and inspection checklist forms were updated. The program continues to investigate additional measures and methodologies that could be used to improve the cost effectiveness of the program.

## **3. SDGE3224 (3P) SW-COM-Deemed Incentives – HVAC Commercial**

### **Program Description:**

The Non-Residential HVAC Tune-up/Quality Installation Program is designed to stimulate the supply and sales of premium-efficiency HVAC systems and to provide energy efficiency tune-up services to commercial customers. It provides incentives to



participating customers, contractors, and equipment specifier/end users who install qualifying air conditioning systems or controllers in commercial replacement and new construction applications, or who participate in program tune-up services. The program includes six subprograms: 1) Statewide Upstream; 2) Statewide Commercial Quality Maintenance; 3) Commercial Quality Installation; 4) Local Area Tune-ups; 5) Local Area Equipment Replacement; and 6) Local Area Hotel/Lodging.

**Implemented Strategies:**

This program made significant improvements to the delivery of quality maintenance services by continuing to require that qualifying units are brought to baseline performance before any payments are issued. Additionally, contractor marketing efforts were successful at generating large numbers of customer commitments for Local Area Tune-up services, resulting in strong production and increased cost effectiveness. Lastly, program incentives were reduced by ten to twelve percent across the board and several less cost effective measures were removed from the program offering.

The increased contractor base, program design improvements and introduction of new technologies contributed to the success of the program as measured by energy savings, peak demand reduction, cost effectiveness, commitments, and customer HVAC systems serviced. Most program performance goals were met or exceeded.

**4. SDGE3226 (3P) SW-COM Direct Install**

**Program Description:**

The Direct Install Program delivers no cost or discounted energy efficiency hardware retrofits through installation contractors to reduce peak demand and energy consumption for small and mid-sized non-residential customers. The program is designed to increase the adoption of energy efficient measures by small, mid-sized, and hard to reach, non-residential customers by offering an energy efficiency energy audit as well as energy efficiency equipment and installation at no cost or at a discounted price.

**Implemented Strategies:**

SDG&E extended its contracts with the program's third party implementers in 2017, and continued to provide its contractors with training to help improve energy audits and

drive higher savings. The introduction of T8 LED Lamps as a no cost measure in September increased participation throughout the remainder of 2017.

**5. SDGE3230 (3P) SW-IND-Customer Services - Audits Comprehensive Industrial Energy Efficiency Program (CIEEP)**

**Program Description:**

The Comprehensive Industrial Energy Efficiency Program develops and implements industrial energy efficiency projects with a focus on both demand reduction and energy efficiency. Incentives are offered through SDG&E core incentive programs.

Customer Facility Audits are provided under the program and offer customers a comprehensive list of measures, savings, and incentive amounts. Upon customer indication of project priorities, the program works with the customer to file applications for incentives and implementation of the project. This comprehensive program targets all available energy efficiency technologies.

**Implemented Strategies:**

SDG&E leverages its Business Services' account executives to identify customers and opportunities for this program. In 2017, a total of 10 projects were approved from the list of projects the vendor must complete prior to the program closing in 2018. Following a program evaluation conducted by SDG&E and a third party consultant as part of a more comprehensive program offering, to eliminate overlap, increase efficiency, and reduce audit costs, it was determined that the CIEEP would be consolidated with the Comprehensive Audit Program in 2018. The projects went through the ex-ante review process and the incentive was paid based on the final savings. In addition to the 10 projects that were approved, the vendor has submitted installation reports for three additional projects from their project list.

**6. Customer Services – Pump Test Services**

**a. SDGE3235 (3P) SW-AG-Customer Services-Pump Test Services**

**Program Description:**

The Energy Efficient Water Pumping Program improves the energy efficiency of water pumps used for irrigation and domestic water supply. The Program will focus on

three market sub-segments: 1) Agriculture; 2) Municipal Water Agencies; and 3) Large Turf Recreational Facilities, such as golf courses, parks, and sports fields. Industrial process pumps, high rise buildings, convention centers, cooling towers, condenser and chiller pumping accounts, in addition to primary, secondary, and tertiary sewage pumps are also eligible to participate in the program. To achieve energy savings, this program covers the cost of pump tests for SDG&E customers. The program provides the customers with an operational plant efficiency report, energy cost savings analysis and incentive program assistance. The reduction in water use will also translate to embedded energy savings, as reduced water use means less energy required to run and deliver water to a water pump.

**Implemented Strategies:**

The agricultural sector is one of SDG&E's smallest sectors and there have been some challenges engaging customers. While the Pump Test Services Program did not have any customer participation in 2017, SDG&E will continue to evaluate strategies to improve customer participation in the agricultural sector by directing customers to the Streamlined Ag Efficiency Program. Additionally, SDG&E believes a completely new approach to better serve this market is warranted as described in its Rolling Portfolio Business Plan.

**b. SDGE3291 (3P) SW-IND-Customer Services-Pump Test Services**

**Program Description:**

The Water Infrastructure and System Efficiency (WISE) Program addresses municipal, commercial, and industrial pumping systems. The program performs pump tests, individual pump efficiency evaluation, and pumping system analysis. The program provides pump efficiency benchmarking, retrofits, repairs, and replacement energy efficiency recommendations to the customer. The program refers customers to SDG&E's core Energy Efficiency Business Incentives Program to take advantage of incentives to assist with the cost for pumps that are repaired or replaced to improve energy efficiency and lower energy costs. The program also encourages customers to enroll in demand response programs and assists customers in evaluating IDSM opportunities.

**Implemented Strategies:**

The WISE Program performed in depth analysis on water pump systems for customers to help them make decide whether to retrofit, repair or replace equipment. Within the SDG&E service territory, only commercial customers enrolled in the program. To accommodate the high level of commercial enrollments and meet customers’ needs, the WISE Program shifted funds from the industrial segment to the commercial segment. The Pump Test Services Program will be assessed in 2018 to evaluate opportunities to improve program performance. During this evaluation, SDG&E will work to determine how this program will best fit into new strategies and tactics for meeting customer needs including those of the industrial sector.

**c. SDGE3292 (3P) SW-COM-Customer Services – Pump Test Services**

**Program Description:**

The WISE Program addresses municipal, agricultural, commercial, and industrial pumping systems. The program performs pump tests, individual pump efficiency evaluation, and pumping system analysis. The program provides pump efficiency benchmarking, retrofits, repairs, and replacement energy efficiency recommendations to the customer. The program refers customers to SDG&E’s core Energy Efficiency Business Incentives Program to take advantage of incentives to assist with the cost for pumps that are repaired or replaced to improve energy efficiency and lower energy costs. The program also encourages customers to enroll in demand response programs and assists customers in evaluating IDSM opportunities.

**Implemented Strategies:**

The WISE Program performed in depth analysis on water pump systems for customers to help them make decide whether to retrofit, repair or replace equipment. The customers showed varying degrees of interest in the program due to WISE’s highly adaptable program design to the customer’s project energy efficiency needs. In 2017, wastewater agencies enrolled in the program for pump tests, individual pump efficiency analysis, and pump system efficiency evaluation. Customers enrolled in the Energy Efficiency Business Incentive Program to take advantage of the incentives to retrofit,

repair, and replace their pumps and pump systems.

#### **7. SDGE3279 (3P) Res-Comprehensive Manufactured – Mobile Home**

##### **Program Description:**

The residential Comprehensive Manufactured and Mobile Home (CMMH) Program is designed to complement SDG&E's residential energy efficiency portfolio by providing energy efficiency measures on a comprehensive basis to manufactured and mobile home customers. This is a targeted market that is not reached by statewide mass market programs but shows rich potential for cost effective energy and demand savings.

##### **Implemented Strategies:**

The CMMH Program continues to be successfully implemented as a one-touch customer approach serving a hard to reach customer segment in the SDG&E service territory. The program implemented a few changes in 2017 to increase the program's cost effectiveness, which allowed SDG&E to achieve the program goal of maximizing ratepayer dollars while incentivizing the installation of energy efficient products. SDG&E will continue to take this approach to program management in 2018 and beyond so that the CMMH Program remains a viable option for energy efficiency offerings.

#### **8. SDGE3280 (3P) Innovative Designs for Energy Efficiency Activities (IDEEA) 365**

##### **Program Description:**

SDG&E, along with the other California IOUs, established a cross-cutting third party solicitation program called the IDEEA365 Program that promotes the "rolling" solicitation concept and is focused on new innovative programs for the 2013-2018 cycle. The program is designed to allow for continuous introduction of innovative ideas and technologies into the energy efficiency portfolio by drawing from the skill, experience and creativity of the energy efficiency community and third party implementers. The IDEEA365 Program creates a mechanism for competitive, year-round solicitations for new third party resource programs that produce cost effective energy savings and demand reduction or non-resource programs strongly tied to customer initiation of energy savings opportunities offered by SDG&E's core programs.

### **Implemented Strategies:**

In 2017, SDG&E did not complete any Request for Applications (RFA) solicitations due to the ongoing preparation for the approval of the Rolling Portfolio Business Plans and the associated proposed solicitation schedule. Upon approval of the Business Plans and solicitation schedule, SDG&E plans to issue another round of IDEEA365 solicitations in accordance with the program design and as outlined in the approved solicitation schedule.

## **9. SDGE3307 (3P) Zero Energy Loss Drain Adoption**

### **Program Description:**

Zero Energy Loss Drain Adoption (ZELDA) is a third party, energy efficiency program implemented by the contractor to capture energy savings throughout SDG&E's service territory with the installation of Zero Energy Loss Drains (ZLD). The program targets customers with air compressors of 150 horsepower (HP) and less, although larger sized compressors are eligible. ZLDs expel condensate from compressed air systems with no associated loss of compressed air. They are typically installed at the compressor, air dryer, filter, storage tank, or at any low point in the piping where moisture might collect. ZLDs open a valve only when signaled by the condensate level control.

The contractor uses a partnership approach with ZLD manufacturer representatives and distributors to quickly identify and reach out to the target market segments and compressor users.

### **Implemented Strategies:**

The contractor continued to market the program in early 2017 and even with the addition of the \$25 incentive to mid-channel partners for facilitating the application process, there was no program participation in 2017. SDG&E filed Advice Letter 3090-E on June 20, 2017 to close the program. Advice Letter 3090-E was approved by the Energy Division effective July 20, 2017.

## **10. SDGE3310 (3P) – Multifamily Heat Pump Optimizer**

### **Program Description:**

The Multifamily Heat Pump Optimizer Program was a full service, turnkey program intended for SDG&E's residential multifamily customers who have heat pumps with an

electric resistance back-up heat source. The program provided a system efficiency screening, installation of a Western Cooling Control™ and installation of a Hairrell Heat Pump Control™.

**Implemented Strategies:**

The program implementer screened representative systems at various property locations with approximately 1,800 total heat pumps; however, none of them met the program criteria for participation, most notably because of the lack of wired-in electric resistance heat. As a result, SDG&E worked with the implementer to determine if additional resources were available that could help overall program success and extended the contract end date to March 2017 to allow for additional program participation.

Despite the additional efforts, the program was unable to solicit additional customer participation and officially ended in March 2017 as referenced in Advice Letter 2951-E/2512-G filed on September 1, 2016.

**11. SDGE3311 (3P) – Energy Advantage Program (EAP)**

**Program Description:**

The Energy Advantage Program (EAP) is a non-resource third party energy efficiency program selected by SDG&E through the IDEEA 365 Program. EAP is designed to educate hard to reach, small and medium business customers about energy savings opportunities, support installation of incremental cost effective energy efficiency projects, and achieve savings for SDG&E through facilitating rebates and incentives for energy efficiency measures. The EAP aims to influence implementation of projects that otherwise would not be completed, and, as a non-resource program, is designed to increase program participation and energy savings in SDG&E's energy efficiency programs.

The EAP recruits customers in SDG&E's territory by partnering with lenders serving the small to medium business market, including Certified Development Corporations that lend on behalf of the Small Business Administration (SBA) and offer the SBA 504 loan product. Other lenders include community-based, property assessed, clean energy, and traditional commercial lenders. Lenders refer customers to EAP who are good candidates for, and interested in, no cost energy efficiency support. This can include customers who:

1) are taking out loans to make future capital investments in their property through new construction, gut rehabilitation or equipment retrofit; 2) have recently acquired or retrofitted property and did not update energy systems or participate in utility programs; or 3) are other customers who may benefit from energy efficiency upgrades. EAP also recruits small and medium business customers through local business associations, networking events, utility account executives and other means that are considered a good match for the small business lenders the program partners with. These leads can be referred to lenders for financing or referred to utility financing programs.

EAP educates stakeholders about the availability and benefits of various financing options and EAP's services, including SDG&E's account executives, local community-based organizations (CBOs), industry associations, chambers of commerce and targeted trade allies/contractors.

Once a customer is referred to the program, EAP offers a range of no cost technical assistance to identify and quantify energy efficiency opportunities. This is typically delivered through a comprehensive energy audit at the facility, but may also include new construction design review or support on selecting a single piece of equipment. The level of technical services provided is based on customer size, complexity, energy savings opportunity and customer interest. Following the technical support, a customer report is developed and presented to the customer to discuss energy cost and non-energy benefits of upgrades and choices. EAP provides follow-up support services to help the customer implement projects and get incentives.

**Implemented Strategies:**

In 2017, EAP enrolled approximately 60 small and medium sized business customers into EAP. These businesses included hotels, office buildings, grocery stores, restaurants and commercial and small manufacturing facilities. These customers received an onsite audit, and customer and project implementation support. EAP helped move more than 80 customers into our core programs (Energy Efficiency Business Rebate, Business Energy Solutions, Energy Efficiency Business Incentives and On-Bill Financing).



## **12. SDGE3322 (3P) – Streamlined Ag Efficiency Program**

### **Program Description:**

The Streamlined Ag Efficiency (SAE) Program commenced in June 2017. The program provides individualized service to agricultural producers and on-farm processors to identify efficiency opportunities, develop and evaluate implementation options, and apply for incentive and rebate funding. The ultimate goal of the SAE Program is healthy participation, and growing sector savings and a vendor community able and willing to articulate the benefits of energy efficiency to their customers.

### **Implemented Strategies:**

The program uses field engineers to build relationships with vendors, associations, government agencies, and other key stakeholders in the realm of the agribusiness market. These relationships enable the program to identify and influence prospective customers to consider upgrades to their equipment. The field engineers then manage the application process, information collection, inspections and M&V in an end-to-end way that minimizes transaction costs for the customer. While the program was new in 2017, there was early customer interest and adoption as the relationships developed, and it is anticipated that this program will grow in 2018.

## **13. SDGE3323 (3P) – Mid-Market Dynamic Energy Efficiency Program**

### **Program Description:**

The Mid-Market Dynamic Energy Efficiency Program (MMDEEP) provides a new approach which enables facility managers or building owners the ability to immediately visualize energy use, identify energy efficiency opportunities and control loads to optimize energy and comfort. Through MMDEEP, Energy360, which is an innovative, low-cost, and secure Energy Management and Control System (EMCS), will be deployed for small and medium commercial customers. This system is designed to deliver real-time load level power monitoring using innovative submeters and wireless building controls (HVAC, lights, pumps, motors, plug-loads) that instantly communicate with secure, cloud-based interfaces.

### **Implemented Strategies:**

This program was not implemented in 2017. This program design and proposed savings were a result of a proposal from IDEEA 365, Round 4 in 2016. The vendor and SDG&E anticipated that nearly 70% of the program's savings would come from a key measure, the RTU Fan Variable Frequency Drive. As SDG&E and the vendor worked together for several months to update the proposed workpaper, adopt it in SDG&E's service territory, and update the savings calculations, it was determined the workpaper could not be adopted without considerable additional expenses. The remaining measures would not generate sustainable savings for the program or support the vendor's costs to run the program. Therefore, it was mutually agreed upon by the vendor and SDG&E that the program should not be implemented.

## **N. Pilot Programs**

### **1. Prop 39 Zero Net Energy (ZNE) Schools Pilot Program**

#### **Program Description:**

Prop 39, California's Clean Energy Jobs Act, will provide \$500 million per year to improve energy efficiency and the use of clean energy in K-12 Schools and Community Colleges.

The CPUC identified Prop 39 as an opportunity to expand California's progress on ZNE retrofits in support of the state's high level energy/sustainability goals. The CPUC directed the IOU's to develop a Prop 39/ZNE pilot program for eligible schools (K-12 and Community Colleges) to provide the necessary resources to make ZNE a reality for qualifying schools.

The program will contain six elements: 1) ZNE Demonstration School Retrofits; 2) Technical Training, Outreach and Recognition; 3) Institutional Training; 4) C&S Coordination, Advocacy and Training; 5) Production Program Development; and 6) Emerging Technologies Support.

SDG&E identified a variety of potential resources to make this possible, such as financial support for energy modeling and a detailed energy efficiency analysis on systems (e.g., HVAC, lighting and envelope measures). The pilot will also strive to develop a process

for buying down the full incremental cost of achieving the energy utilization footprint required for ZNE.

To ensure schools achieve ZNE status, monitoring and evaluation of the major building systems to check for operating problems and/or anomalies is critical. In addition, the IOUs will produce materials, publications and trainings demonstrating key successes in high performing ZNE buildings.

Working with stakeholders in the schools' community, the CEC, CPUC, the governor's office, other state agencies and the utilities will develop a recognition program highlighting outstanding energy efficiency and ZNE performance in the K-12 and Community College arenas.

**Implemented Strategies:**

SDG&E accepted its first project in 2015, the Vista Grande Elementary School, which is part of the San Diego Unified School District. This two-story, 55,000 sq. ft. facility's internal and external lighting upgrades have already been performed at the site, and once the contracts are in place the rest of the measures for the project will be completed in 2019. The measures include HVAC upgrades, controls and sensors, plug load management, building envelope improvements, and PV installation. High Tech Middle North County was selected in June 2016 as the second project. The school was built in 2012 and is certified LEED platinum and presently has an EPA Energy Star Portfolio Manager score of 100. The school has completed its energy modeling and its energy measure by upgrading the building envelope and the HVAC system, installing LED lighting for the interior and exterior, installing plug load controllers, sensors and controls, and adding more PV to their existing system. With the upgrades completed, measurement and verification will be performed to validate their energy usage will be Net Zero so that it can be deemed a ZNE verified building.

**0. High Opportunity Project or Programs (HOPPs)**

**1. SDGE3317 HOPPs Retrocommissioning (RCx)**

**Program Description:**

In response to the Commission's Ruling regarding HOPPs, dated December 30, 2015,

SDG&E designed its HOPPs RCx Program to offer a systematic process to identify operational and maintenance improvements that optimize building performance and ensure that building systems function efficiently and effectively. SDG&E submitted the original HOPPs RCx Advice Letter 2864-E on March 1, 2016, and it was approved by the CPUC on August 3, 2016, effective July 27, 2016.

HOPPs RCx is designed to ensure persistence of savings by requiring customers to commit to a three-year maintenance plan. This program replaced SDG&E's previous RCx Program at the end of 2016.

**Implemented Strategies:**

SDG&E and the contracted implementer worked closely in 2017 to start-up and launch the new HOPPs RCx Program. Start-up activities primarily entailed preparing program documentation and marketing materials. The website was launched in March of 2017. Other launched activities included screening RCx providers and initiating outreach activities with SDG&E's account executives. For the RCx providers, the implementer conducted a request for qualifications to screen interested engineering firms to identify those with the necessary expertise for the program. Six firms were approved to participate as RCx providers.

To initiate customer outreach, the implementer hosted a training for SDG&E's Business Services' account executives in mid-January to detail the customer value proposition, rules, and eligibility requirements of the new HOPPs RCx Program. After this training, the implementer and account executives worked to drive customer applications, conduct site screenings and filling the program pipeline with high energy saving potential projects. By the end of the year, the pipeline was full and projects stood at various stages of investigation and implementation. In 2018, these projects are anticipated to complete installation and deliver energy savings, exceeding program goals. As each project is completed, a three-year monitoring period will begin. Energy baseline models have been established for all the projects and their ongoing performance will be measured against those models.

In 2017, SDG&E created a secondary HOPPs RCx path for customers, classifying it as

the self-sponsored path. Unlike the third party implemented path where an authorized vendor manages the process and program, a self-sponsored project includes roles held by SDG&E, the customer and any third party hired by the customer. The self-sponsored path follows the same guidance as laid out in the Commission's Ruling regarding HOPPs and ensures persistence of savings. This is done by restructuring the previous incentive process and stretching the incentive out through four payments over three years. Self-sponsored customers can use their own staff or contracted commissioning (Cx) agents to perform measurement and verification of the work performed during the installation and at the end of each year of the maintenance plan phase of a project.

The self-sponsored path was also created to address the monitoring-based commissioning (MBCx) custom projects. Monitoring-based commissioning (MBCx) emphasizes permanent energy performance metering and trending—for diagnosis of energy waste and savings accounting, and to enable persistence of savings. MBCx is a unique combination of whole-building monitoring and retrocommissioning. The monitoring supports the retrocommissioning effort by providing a diagnostic tool, as well as by documenting energy savings in the near term and increasing savings persistence over the long-term. Such monitoring, particularly through NMEC, has been emphasized by the legislature and CPUC through recent laws and decisions, such as AB 793 and AB 802.

## **2. SDGE3318 HOPPs Multifamily**

### **Program Description:**

The Multifamily HOPPs focuses on early replacement measures in common areas. The Multifamily HOPPs implements via common area measure categories to augment various other program offerings serving multifamily tenant spaces. The target market for the program is high energy use intensity (EUI), multifamily buildings built prior to 1980, regardless of income qualification or location. The Multifamily HOPPs will implement a direct install approach to address challenges faced to-date engaging property owners on making energy efficiency upgrades to their common areas. The Multifamily HOPPs also focuses on developing benchmarks, collecting data for potential case studies, and return on investment calculations for common areas in these targeted buildings.

### **Implemented Strategies:**

In 2017, the contractor successfully completed common area retrofits at approximately 12 multifamily property locations. The properties were primarily identified by two methods: 1) via targeting high EUI multifamily properties that had previous participation in other rebate programs; and 2) via county assessor data provided by a third party consultant that documented details (age, number of units, amenities, etc.) of the territory's properties that were evaluated by SDG&E. These two methods combined, allowed a more cost effective and streamlined enrollment due to customer familiarity with IOU programs and increased likelihood of customer eligibility before visiting the site.

The program was successful in targeting measures that are typically ignored by property owners and managers – such as common area water heaters/boilers – due to the higher initial cost for these types of measures. However, this measure demand was unexpected and caused some slight delays in project completion as the vendor sourced additional boilers to be installed. Additionally, in many cases the property manager does not typically have the SDG&E account and meter numbers onsite to allow benchmarking data collection, which causes delays in the process.

SDG&E will perform a post-retrofit NMEC analysis of a sample of treated sites to verify the measures are still installed and operating as intended. The results will be shared with the customer to provide feedback on realized savings.

### **P. SDGE3324 Water Energy Nexus Initiatives**

#### **Program Description:**

The California Water Plan is the state's Strategic Plan for managing and developing water resources statewide for current and future generations.<sup>3</sup> It provides a collaborative planning framework for elected officials, agencies, tribes, water and resource managers, businesses, academia, stakeholders, and the public to develop findings and recommendations and make informed decisions for California's water future.

The Commission opened Rulemaking (R.) 13-12-011 which is intended to develop policies that will promote a partnership framework between energy IOUs and the water

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<sup>3</sup> The California Water Plan is available at [http://www.water.ca.gov/waterplan/about\\_us/index.cfm](http://www.water.ca.gov/waterplan/about_us/index.cfm).

sector to develop and implement Water Energy Nexus (WEN) programs and initiatives to meet the requirements of the California Water Plan. The Commission's ultimate goal is to "reduce energy consumption by the water sector in supplying, conveying, treating, and distributing water."<sup>4</sup>

The Commission issued several decisions described below that would promote these WEN objectives.

D.15-09-023 adopted the WEN Cost Calculator tool that is designed to calculate the embedded energy in water and avoided capacity cost associated with water savings.<sup>5</sup>

D.16-06-010 approved pilots to test the impacts of joint delivery of energy and water data to customers, including the shared use of the energy utility's advanced metering communication network.<sup>6</sup> This decision also set the requirements for the IOUs to report WEN activities beginning with the 2016 Energy Efficiency Annual Reports due in 2017.<sup>7</sup>

D.16-11-021 approved the electric energy IOUs' pilots to test the concept of "Matinee Rates" that would encourage water and energy use efficiency. The Matinee Rates pilots would provide for "tariffs that would encourage a shift in energy use by commercial, industrial, and agricultural users to alternative times of the day when abundant renewable and low-water-using energy are produced at high (and growing) quantities."<sup>8</sup>

D.16-12-047 provides direction for next steps to: (1) update the WEN calculator and connect it to the energy efficiency cost effectiveness calculator; (2) incorporate a value representing the embedded natural gas in the water system; and (3) create a Plan of Action to update the WEN calculator working with the Energy Division.<sup>9</sup>

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<sup>4</sup> *Decision Granting petition and Opening Rulemaking*, December 30, 2013 is available at <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M084/K481/84481715.PDF>.

<sup>5</sup> *D.15-09-023, Decision regarding Tools for Calculating the Embedded Energy in Water and an Avoided Capacity Cost Associated with Water Savings*, September 25, 2015 available at <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M154/K551/154551293.PDF>.

<sup>6</sup> *D.15-09-023, Decision approving pilots to Test Impacts of Joint Delivery of Energy and Water Data to Customers and Exploring Technical Issues Associated with Shared Use of Energy Utility Advanced Metering Communication Network*, June 9, 2016 available at <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M163/K328/163328148.PDF>.

<sup>7</sup> *Id.* at 21.

<sup>8</sup> *D.16-11-021, Decision Approving Pilots for Matinee Pricing*, November 16, 2016 available at <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M169/K487/169487466.PDF>.

<sup>9</sup> *D.16-12-047, Decision Updating the Water Energy Nexus Cost Calculator, proposing Further Inquiry, and Next Steps*, December 20, 2016 available at <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M171/K495/171495551.PDF>.



## **1. Water Energy Nexus (WEN) Calculator and Measure Workpaper Activities**

In 2017, SDG&E as the lead utility worked with the IOUs to develop and submit the WEN statewide workpapers for deemed measures offered by the IOUs and Metropolitan Water District. The statewide workpaper was submitted in May and gained pass through approval in June.

In August, the Statewide Water Energy Action Plan was filed; it offered recommendations on how to address GHG emission values, the Cost Effectiveness Tool, the WEN Calculator, DEER updates to include water saving and the natural gas intensity value. On December 18, 2017, the Commission issued D.17-12-010, *Decision Resolving the Petition for Modification of Decision 16-12-047, Adopting the Plan of Action, and Closing Rulemaking*, which adopted the recommendations from the Plan.

In addition, SDG&E and the San Diego County Water Authority finalized the Strategic Framework document that identified areas of potential joint program offerings that would benefit energy and water customers. The four areas of focus are audits, indoor water end use, outdoor water end use, and custom projects. Initial discussions with program staff started at the end of 2017.

## **2. Advanced Metering Infrastructure Pilot Activities**

SDG&E partnered with Rainbow Municipal Water District (RMWD) and Itron Corporation (Itron) to implement the Advanced Meter Infrastructure Pilot. The pilot will test the feasibility of “piggybacking” RMWD water meter data across the SDG&E Smart Meter Network to an Itron-hosted analytics system. It will also evaluate the benefits, costs, and value of deploying Smart Meter technology throughout RMWD’s service area. Additionally, the pilot will investigate new technologies capable of providing secured multitenant network access on two-way communication network infrastructure.

In 2017, SDG&E, along with its partners Rainbow Municipal Water District (RMWD) and Itron, began implementation of the pilot. Thirty (30) AMI communication water modules were installed in field. In late December, the modules began communicating to the Itron hosted Data Center. Initial results were positive, but due to some configuration



and network communication issues there was a delay in getting the interval data to RMWD. Itron began providing RMWD interval data for evaluation and analysis. Additional water modules will be installed in 2018.

### **3. Energy Matinee Pricing Tariff Pilot Activities**

CPUC D.16-11-021, approving the Energy Matinee Pricing Tariff Pilot, states: *“The purpose of these tariffs is to pilot and evaluate the effect of tariffs designed to allow for the shift of energy use by commercial, industrial, and agricultural users to midday when abundant renewable and low-water-using energy are produced at high (and growing) quantities. We accomplish this shift by directly signaling to consumers with an Energy Matinee Pricing Tariff the times when low-water-using energy is more abundant, and demand is currently low. Theaters have long used ‘Matinee Pricing’ to attract patrons to fill theater seats midday. An Energy Matinee Pricing Tariff addresses the water energy nexus by better aligning abundant midday energy supply with commercial, industrial, and agricultural electric demand.”*<sup>10</sup>

The purpose of the pilot was to demonstrate “proof of concept” for energy matinee pricing and track associated system benefits for both water and energy.<sup>11</sup>

SDG&E’s Water Energy Nexus Energy Matinee Pricing Tariff Pilot Implementation Plan (Advice Letter 3053-E) was filed March 10, 2017. In addition, SDG&E filed a petition for modification (PFM) of D.16-11-021 that identified circumstances that would make SDG&E’s proposed Matinee Pricing Tariff Pilot moot. On November 9, 2017, the Commission approved SDG&E’s PFM that eliminated the requirement to implement its pilot.

### **4. Energy Efficiency WEN Programs and Activities**

The table below reflects the 2017 water conservation measures offered under SDG&E’s energy efficiency and ESA programs.

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<sup>10</sup> D.16-11-021 at p. 5.

<sup>11</sup> D.16-11-021 at p. 18.

Energy Efficiency Program Name	Measure	Quantity	Gallons of H2O Saved	Average Annual SDG&E kWh Saved	Average Annual WEN kWh Saved
SW-CALS-Plug Load and Appliances-HEER	Water Saving Kit	44,263	167,866,968	435,691	777,689
SW-CALS-Plug Load and Appliances-HEER	Clothes Washer - Front Loading - Energy Star Most Efficient	1,743	2,395,116	6,214	11,095
SW-CALS-Plug Load and Appliances-POS Rebates	Clothes Washer - Front Loading - Energy Star Most Efficient	9	473,556	1,229	2,194
SW-CALS-MFEER	Kitchen Faucet Aerator	152	4,188,375	10,877	19,419
SW-CALS-MFEER	Low Flow Showerheads	188	26,527,105	68,842	122,912
Local-CALS - Middle Income Direct Install (MIDI)	Kitchen Faucet Aerator	94	52,013	135	241
Local-CALS - Middle Income Direct Install (MIDI)	Low Flow Showerheads	200	618,310	1,605	2,865
SW-COM-Deemed Incentives-Commercial Rebates	Ice Machines 301-400 - CEE Tier III	2	100,375	260	465
SW-COM-Deemed Incentives-Commercial Rebates	Ice Machines 401-500 - CEE Tier III	1	100,375	260	465
SW-COM-Deemed Incentives-Commercial Rebates	Ice Machines 501-1000 - CEE Tier III	2	100,375	260	465
SW-COM-Deemed Incentives-Commercial Rebates	Ice Machines >1500 - CEE Tier III	2	100,375	260	465
SW-COM-Deemed Incentives-Commercial Rebates	Low Flow Showerhead	29	3,468,960	9,002	16,073
SW-COM-Deemed Incentives-Commercial Rebates	Ozone Laundry System	2	320,735	832	1,486
SW-COM Direct Install	Low Flow Showerhead	12	409,530	1,063	1,898
SW-COM Direct Install	Pre-Rinse Spray Head In Restaurants - 1.15 GPM	452	2,852,475	7,369	13,025
3P-Res-Comprehensive Manufactured-Mobile Home	Kitchen Faucet Aerator	551	302,768	784	1,390
3P-Res-Comprehensive Manufactured-Mobile Home	Low Flow Showerheads	2,121	6,303,550	16,321	28,982
	<b>Totals</b>	<b>49,823</b>	<b>216,180,960</b>	<b>561,004</b>	<b>1,001,128</b>
Energy Savings Assistance Program	Measure	Quantity	Gallons of H2O Saved	Average Annual SDG&E kWh Saved	Average Annual WEN kWh Saved
ESA	Clothes Washer	388	532,336	1,376	2,436
ESA	Faucet Aerator	17,571	9,620,123	24,979	44,585
ESA	Low Flow Showerhead	6,275	12,597,063	32,665	58,212
ESA	Showerhead/Thermostatic Shower Valve	5	10,038	24	47
	<b>Totals</b>	<b>24,239</b>	<b>22,759,559</b>	<b>59,044</b>	<b>105,280</b>
<b>Total Energy Efficiency and ESA</b>		<b>74,062</b>	<b>238,940,518</b>	<b>620,048</b>	<b>1,106,407</b>

## 5. WEN Programs and Activities

SDG&E continued its partnership with the San Diego County Water Authority to offer homeowner workshops at its Energy Innovation Center. Over 400 homeowners participated in water-wise landscape workshops. In addition, SDG&E partnered with Moulton Nigel Water District to participate at the Live Smart Waterwise event with 1,000 attendees.

### Q. Other Energy Efficiency Activities and Programs

#### 1. SDGE3259 SW-ME&O

##### Program Description:

The Statewide Marketing, Education, and Outreach (ME&O) Program is implemented by DDB San Francisco. Statewide ME&O is centered on the Energy Upgrade California (EUC) campaign, a statewide educational campaign that aims to lead consumers

to products, services, and rates that empower all Californians to take actions that will lead to lower bills, higher energy efficiency, and more customer-owned renewable energy technologies. DDB is the statewide administrator and implementer of this campaign and submits the Annual Report (known as the Joint Consumer Action plan or JCAP). This program is tracked separately from the general energy efficiency portfolio.

**Implemented Strategies:**

SDG&E serves in a supportive and consultative role. SDG&E’s ME&O staff actively participates in ongoing collaboration efforts between DDB and the IOUs at the EUC quarterly stakeholder meetings, regular calls, joint retail community events, media appearances, and other opportunities as agreed upon with the statewide ME&O administrator. SDG&E provides regular feedback and input to the statewide ME&O strategies and creative executions.

**2. SDGE3281 EM&V – Evaluation Measurement and Verification**

**Program Description:**

SDG&E EM&V team works within the statewide EM&V framework and is party to most statewide EM&V studies. The EM&V budget is used to support the statewide EM&V teams in conducting and managing ongoing study activities to produce various market studies, process evaluations, and the like. In addition to managing or participating in statewide studies, the EM&V team supports the programs through providing feedback gathered from the studies, assisting with response to recommendations, and attending various project coordination group meetings.

**3. SDGE3288 Customer Relationship Management (CRM)/Energy Efficiency Collaboration Platform (EECP)**

**Program Description:**

SDG&E uses the EECP to manage its day to day activities in tracking projects and claims for rebates and incentives for its Customer Programs Department. The system allows SDG&E to track the progress of a project for a customer or Trade Ally that is requesting an incentive or rebate. The EECP also tracks which measures and services have been done at a customer site and ensures that we meet program requirements through

program rule implementation and oversight. The EECF collects all information and data needed for each implementation and project to allow for accurate reporting.

**4. Statewide New Finance Offerings**

**SDGE3264 SW-FIN – New Finance Offerings CHEEF & Funds Reserved**

**SDGE3296 SW-FIN – New Finance Offerings Small Business Lease Off Bill**

**SDGE3297 SW-FIN – New Finance Offerings Fin Pilot Cr Enhancement  
SFLP**

**SDGE3298 SW-FIN – New Finance Offerings Med/Large OBR**

**SDGE3299 SW-FIN – New Finance Offerings MMMFP OBR**

**SDGE3300 SW-FIN – New Finance Offerings Small Business Lease OBR**

**SDGE3301 SW-FIN – New Finance Offerings Small Business Loan OBR**

**SDGE3308 SW-FIN – New Finance Offerings Finance ME&O**

**SDGE3312 SW-FIN – New Finance Offerings Finance Pilot IT Support**

**Program Description:**

In D.12-11-015, the Commission authorized \$75.2 million for new energy efficiency financing pilot programs to be implemented in 2013-2014. However, due to the complexity of the process to design and implement these innovative new pilots, the pilot period lasted beyond 2014. In D.13-09-044, the Commission approved a series of financing pilot programs covering both residential and non-residential markets, and further extending the pilot period to 2015. Subsequently, D.15-06-008 further extended the pilots' terms beyond 2015 so that each pilot is funded for a full 24 months of operation with no additional budget, as approved originally in D.12-11-015. Lastly, D.17-03-026 authorized continued utility pilot support and funding. Ordering Paragraph 7 of the Decision states:

Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall be authorized to spend up to \$500,000 annually and Southern California Gas Company shall be authorized to spend up to \$800,000 annually, beginning in 2017 and ending at the end of 2020 for information technology, marketing, and administrative costs necessary to support the financing pilot programs. Each utility shall file a Tier 2 advice letter containing details of the costs to be covered and proposing the funding source, whether energy efficiency program funding

previously authorized or incremental funding, and explaining the rationale for its proposal.

Accordingly, SDG&E filed Advice Letter 3147-E/2625-G with information on its 2017 program budget and the 2018-2020 annual budget. SDG&E's Advice Letter was approved effective January 1, 2018. These pilots are tracked separately from the standard energy efficiency program portfolio.

The financing pilots are administered by the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) and include various forms of credit enhancements (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. Some of the pilots also include an on-bill repayment feature.

**Implemented Strategies:**

The first pilot to launch was the Residential Energy Efficiency Loan (REEL) Assistance Program, which had its midpoint review in summer 2017. As of year-end, participating lenders funded approximately 25 projects in SDG&E's service territory, with a combined project cost of over \$400,000. SDG&E continues to work collaboratively with CAEATFA and other program stakeholders including the statewide finance marketing, education and outreach administrator, the Center for Sustainable Energy. The goal is to increase the program's effectiveness and facilitate loan volume by targeting homeowners through local, targeted marketing efforts, such as email messaging and social media campaigns. The remaining pilots are expected to launch in late 2018 or early 2019.

## SECTION 1 - ENERGY SAVINGS

The purpose of the following table (Table 1) is to report the annual impact of the energy efficiency portfolio of programs implemented by SDG&E for the 2017 program year. The annual impacts are reported for 2017 in terms of annual and lifecycle energy savings in GWh (gigawatt hours), annual and lifecycle natural gas savings in MMth (million therms), and peak demand savings in MW (megawatts). 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 ESA Program (ESAP) and pre-2006 Codes and Standards (C&S) (ESAP and C&S savings are broken out as separate line items in Table 6 - Savings by End-Use.)

<b>Table 1</b>				
<i>Electricity and Natural Gas Savings and Demand Reduction (Gross)</i>				
<b>Annual Results</b>		<b>2017 Installed Savings</b>	<b>CPUC 2017 Adopted Goals (D.15-10-028)</b>	<b>% of Goals (2017)</b>
<b>2017 Energy Savings (GWh) – Annual</b>				
	SDG&E	482	304	158%
<b>TOTAL Energy Savings (GWh) - Annual</b>				
<b>2017 Energy Savings (GWh) – Lifecycle</b>				
	SDG&E	5,457		
<b>TOTAL Energy Savings (GWh) – Lifecycle</b>				
<b>2017 Natural Gas Savings (MMth) – Annual</b>				
	SDG&E	2.10	3.30	64%
<b>TOTAL Natural Gas Savings (MMth) – Annual</b>				
<b>2017 Natural Gas Savings (MMth) – Lifecycle</b>				
	SDG&E	12		
<b>TOTAL Natural Gas Savings (MMth) – Lifecycle</b>				
<b>2017 Peak Demand savings (MW)</b>				
	SDG&E	87	50	175%
<b>TOTAL Peak Demand Savings (MW)</b>				

## SECTION 2 - EMISSION REDUCTIONS

The purpose of the following table (Table 2) is to report the annual incremental environmental impacts of the energy efficiency portfolio (for both electricity and natural gas) of programs implemented by SDG&E during the 2017 program year. Parties agreed that the impacts should be in terms of annual and lifecycle tons of CO<sub>2</sub>, NO<sub>x</sub>, and PM<sub>10</sub> avoided and should come from the E3 calculator.

<b>Annual Results</b>	<b>Annual tons of CO<sub>2</sub> avoided</b>	<b>Lifecycle tons of CO<sub>2</sub> avoided</b>	<b>Annual tons of NO<sub>x</sub> avoided</b>	<b>Lifecycle tons of NO<sub>x</sub> avoided</b>	<b>Annual tons of PM<sub>10</sub> avoided</b>	<b>Lifecycle tons of PM<sub>10</sub> avoided</b>
<i>2017 Portfolio Targets</i>	453,417	5,148,247	67	748	29	327
SDG&E						
<b>2017 Total</b>	453,417	5,148,247	67	748	29	327

### **SECTION 3 - EXPENDITURES**

The purpose of Table 3 is to report the annual costs expended by SDG&E in implementing the 2017 energy efficiency portfolio of programs. The report shows the “Total Portfolio Expenditures” broken out into Administrative Costs, Marketing/Advertising/Outreach Costs, and Direct Implementation Costs for the entire portfolio. The next two sets of expenditures represent sub-components of the portfolio already included in the Total Portfolio Expenditures totals: 1) Total Competitive Bid Program Expenditures (sub-component of portfolio); and 2) Total Partnerships Expenditures (sub-component of portfolio). The last component, “Total EM&V Expenditures” (separate from portfolio), will be reported for both SDG&E and “Joint Staff”, which reflects Energy Division-managed studies.

See Appendix D for Table 3.



## SECTION 4 - COST EFFECTIVENESS

The purpose of the following table (Table 4) is to provide an annual update on the cost effectiveness of the energy efficiency portfolio of programs being implemented in the 2017 program year.

**Table 4**  
*Cost Effectiveness (Net)*

<b>Annual Results</b>	<b>Total Cost to Billpayers (TRC)</b>	<b>Total Savings to Billpayers (TRC/PAC)</b>	<b>Net Benefits to Billpayers (TRC)</b>	<b>TRC Ratio</b>	<b>Total PAC Cost</b>	<b>PAC Ratio</b>	<b>PAC Cost per kW Saved (\$/kW) [1]</b>	<b>PAC Cost per kWh Saved (\$/kWh)</b>	<b>PAC Cost per therm Saved (\$/therm)</b>
<b>SDG&amp;E 2017</b>	\$ 253,243,561	\$ 499,821,592	\$ 246,578,030	1.97	\$ 101,556,641	4.92		0.03	2.37
<b>TOTAL</b>	<b>\$ 253,243,561</b>	<b>\$ 499,821,592</b>	<b>\$ 246,578,030</b>	<b>1.97</b>	<b>\$ 101,556,641</b>	<b>4.92</b>		<b>0.03</b>	<b>2.37</b>

[1] The adopted avoided cost methodology does not provide information to provide a meaningful value for PAC Cost per kW. The adopted avoided cost methodology created kWh cost values that vary for each hour of the year that include kW generation.

## SECTION 5 - RATEPAYER IMPACTS

The purpose of the following table (Table 5) is to report the annual impact of the energy efficiency activities on customer bills relative to bills 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**  
*Ratepayer Impacts*

<b>2017</b>	<b>Electric Average Rate (Res and Non-Res) \$/kwh</b>	<b>Gas Average Rate (Core and Non-Core) \$/therm</b>	<b>Average First Year Bill Savings (\$)</b>	<b>Average Lifecycle Bill Savings (\$)</b>
SDG&E	\$0.238	\$0.448	\$ 115,389,862	\$ 1,301,946,727

## SECTION 6 - SAVINGS BY END-USE

The purpose of the following table (Table 6) is to show annual portfolio savings by residential and non-residential end-uses, including those savings attributable to the ESA program and Codes and Standards pre-2006 advocacy work.

**Table 6**  
*Annual Savings By End-Use 2017 Only*

Use Category	GWH	% of Total	MW	% of Total	MMTh	% of Total
Appliance or Plug Load	34.03	7.06%	3.64	4.17%	(0.15)	-7.19%
Building Envelope	5.51	1.14%	1.32	1.51%	0.18	8.47%
Compressed Air	1.18	0.25%	0.07	0.08%	(0.00)	0.00%
Commercial Refrigeration	13.88	2.88%	2.14	2.45%	(0.01)	-0.38%
Codes & Standards	21.00	4.36%	3.21	3.68%	(0.00)	-0.01%
Food Service	0.06	0.01%	0.01	0.01%	0.05	2.15%
HVAC	46.55	9.66%	12.97	14.86%	0.81	38.37%
Irrigation	0.00	0.00%	0.00	0.00%	0.00	0.00%
Lighting	250.73	52.05%	38.79	44.44%	(2.43)	-115.67%
Non-Savings Measure	0.00	0.00%	0.00	0.00%	0.00	0.00%
Process Distribution	0.61	0.13%	0.16	0.19%	0.00	0.00%
Process Drying	0.00	0.00%	0.00	0.00%	0.00	0.00%
Process Heat	2.80	0.58%	0.42	0.48%	0.21	9.91%
Process Refrigeration	0.00	0.00%	0.00	0.00%	0.00	0.00%
Recreation	40.24	8.35%	4.78	5.47%	0.01	0.46%
Service	0.00	0.00%	0.00	0.00%	0.00	0.00%
Service and Domestic Hot Water	3.91	0.81%	0.42	0.49%	1.36	64.92%
Whole Building	61.20	12.71%	19.36	22.18%	2.08	98.96%
<b>Total</b>	<b>481.70</b>	<b>100.00%</b>	<b>87.30</b>	<b>100.00%</b>	<b>2.10</b>	<b>100.00%</b>

## SECTION 7 - COMMITMENTS

The purpose of the following table (Table 7) is to allow the utilities to report commitments (contractual or incentive) that will produce savings 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**  
*Commitments<sup>5</sup>*

Commitments Made in the Past with Expected Implementation after December 2010-2012				
2010-2012 <sup>1</sup>	Committed Funds \$	Expected Energy Savings		
		GWH	MW	MMth
[PA] Total	\$ 1,244,513	0.8	0.1	0.02
Commitments Made in the Past Year with Expected Implementation after December 2015				
2013-2015 <sup>2</sup>	Committed Funds \$	Expected Energy Savings		
		GWH	MW	MMth
[PA] Total	\$ 4,684,437	7.8	35.4	0.23
Commitments Made in the Past Year with Expected Implementation after December 2016				
2016 <sup>3</sup>	Committed Funds \$	Expected Energy Savings		
		GWH	MW	MMth
[PA] Total	\$ 4,376,465	1.96	0.35	0.02
Commitments Made in the Past Year with Expected Implementation after December 2017				
2017 <sup>4</sup>	Committed Funds \$	Expected Energy Savings		
		GWH	MW	MMth
[PA] Total	\$ 12,376,052	22.66	3.44	0.41

<sup>1</sup> Committed funds are associated with the 2010-2012 program cycle. These funds are reserved or encumbered for future work permitted per Ordering Paragraph 13 and Conclusion of Law 12 of D.12-11-015.

<sup>2</sup> Committed funds are associated with the 2013-2015 program cycle. These funds are reserved or encumbered for future work permitted as outlined in the Guidance Documents under the Archived section of EESTATS and EE decision (D.15-10-028).

<sup>3</sup> Committed funds are associated with the 2016 program year. These funds are reserved or encumbered for future work permitted as outlined in the Guidance Documents under the Archived section of EESTATS and EE decision (D.15-10-028).

<sup>4</sup> Committed funds are associated with the 2017 program year. These funds are reserved or encumbered for future work permitted as outlined in the Guidance Documents under the Archived section of EESTATS and EE decision (D.15-10-028).

<sup>5</sup> The amounts reported in Committed Funds do not include SDG&E's Energy Efficiency Finance Pilots remaining balance from unspent funds 2013-2016, or funding requested from Balancing Accounts as approved in Advice Letter 3147-E/2625-G. The remaining balance/unspent funds associated with the Financing Pilots at the end of 2017 is \$6,384,582.

## SECTION 8 - SHAREHOLDER PERFORMANCE INCENTIVES

The purpose of the following table (Table 8) is to report SDG&E's forecasted and actual efficiency savings and performance incentives.

**Table 8**

*Shareholder Incentives (ESPI)*

Program Year	2013	2014	2015	2016	2017	2018
Forecast (1)	\$ 5,720,473	\$ 6,081,613	\$ 3,000,000	\$ 3,135,968	\$ 4,500,000	\$ 4,500,000
Actual(2)	\$ 5,275,232	\$ 5,063,415	\$ 4,654,855	\$ 3,859,276	NA	NA

Program Year	ESPI RESOLUTIONS (2)		FORECAST EE ESPI (1)
	Part 1	Part 2	
2013	G-3497	G-3510	E-2448
2014	G-3510	E-4807	E-2448
2015	E-4807	E-4897	D.14-10-046
2016	E-4897	NA	NA
2017	NA	NA	E-2951
2018	NA	NA	A.17-01-014

(1) Forecast ESPI claim source is the EE Budget Forecast filing.

(2) Actual ESPI claim source are resolutions.

Note: Program Year 2014 reduced by (\$629,150) as reflected in Resolution E-4897.

## APPENDIX A – SDG&E 2017 Program Numbers

Program ID	Program Name	Date Added (new programs)	Date Removed
SDGE3201	SWCALs-Energy Advisor-HEES (UAT)	1/1/2013	N/A
SDGE3203	SW-CALS-Plug Load and Appliances-HEER	1/1/2013	N/A
SDGE3204	SW-CALS-Plug Load and Appliances-POS Rebates	1/1/2013	N/A
SDGE3207	SW-CALS Multifamily Energy Efficiency Rebate Program	1/1/2013	N/A
SDGE3209	SW-CALS EUC HUP	1/1/2013	N/A
SDGE3211	(3P) Local-CALS-Middle Income Direct Install (MIDI)	8/1/2013	N/A
SDGE3212	(3P) SW-CALS-Residential HVAC-QI/QM (AC Quality Care)	1/1/2013	N/A
SDGE3213	SW-CALS-CAHP/ESMH-California Advanced Homes	1/1/2013	N/A
SDGE3215	SW-COM-Strategic Energy Management	1/1/2013	N/A
SDGE3216	SW-COM-Customer Services-Benchmarking	1/1/2013	N/A
SDGE3217	SW-COM0-Customer Services-Audits Non-Res	1/1/2013	N/A
SDGE3218	(3P) SW-COM - Customer Services - Audits Healthcare Energy Efficiency (HEEP)	1/1/2013	Consolidated with Program as filed by Advice Letter 2951-E/2515-G 9/1/16
SDGE3219	(3P) SW-COM-Customer Services - Audits Lodging Energy Efficiency (LEEP)	1/1/2013	Consolidated with Program SDGE3217 as filed in Advice Letter 2951-E/2515-G 9/1/16
SDGE3220	SW-COM-Calculated Incentives-Calculated	1/1/2013	N/A
SDGE3222	SW-COM-Calculated Incentives-Savings by Design	1/1/2013	N/A
SDGE3223	SW-COM-Deemed Incentives-Commercial Rebates	1/1/2013	N/A
SDGE3224	(3P) SW-COM-Deemed Incentives-HVAC Commercial	1/1/2013	N/A
SDGE3225	SW-COM-Deemed Incentives-HVAC Core	1/1/2013	N/A
SDGE3226	(3P) SW-COM-Direct Install	1/1/2013	N/A

<b>Program ID</b>	<b>Program Name</b>	<b>Date Added (new programs)</b>	<b>Date Removed</b>
SDGE3227	SW-IND-Strategic Energy Management	1/1/2013	N/A
SDGE3228	SW-IND-Customer Services-Benchmarking	1/1/2013	N/A
SDGE3229	SW-IND-Customer Services-Audits Non-Res	1/1/2013	N/A
SDGE3230	(3P) SW-IND-Customer Services-Audits Comprehensive Industrial Energy Efficiency Program (CIEEP)	1/1/2013	N/A
SDGE3231	SW-IND-Calculated Incentives-Calculated	1/1/2013	N/A
SDGE3233	SW-IND-Deemed Incentives	1/1/2013	N/A
SDGE3234	SW-AG-Customer Services-Benchmarking	1/1/2013	N/A
SDGE3235	(3P) SW-AG-Customer Services-Pump Test Services	1/1/2013	N/A
SDGE3236	SW-AG-Customer Services-Audits Non-Res	1/1/2013	N/A
SDGE3237	SW-AG-Calculated Incentives-Calculated	1/1/2013	N/A
SDGE3239	SW-AG-Deemed Incentives	1/1/2013	N/A
SDGE3240	SW-Lighting Market Transformation	1/1/2013	N/A
SDGE3241	SW-Lighting Innovation-ETPC Measure Development (MD)	1/1/2013	N/A
SDGE3245	SW-Lighting-Primary Lighting	1/1/2013	N/A
SDGE3246	SW-ET-Technology Introduction Support	1/1/2013	N/A
SDGE3247	SW-ET-Technology Assessment Support	1/1/2013	N/A
SDGE3248	SW-ET-Technology Development Support	1/1/2013	N/A
SDGE3249	SW-C&S-Building Codes & Compliance Advocacy	1/1/2013	N/A
SDGE3250	SW-C&S-Appliance Standards Advocacy	1/1/2013	N/A
SDGE3251	SW-C&S-Compliance Enhancement	1/1/2013	N/A
SDGE3252	SW-C&S-Reach Codes	1/1/2013	N/A
SDGE3253	SW-C&S-Planning Coordination	1/1/2013	N/A
SDGE3254	SW-WE&T-Centergies	1/1/2013	N/A
SDGE3255	SW-WE&T-Connections	1/1/2013	N/A

<b>Program ID</b>	<b>Program Name</b>	<b>Date Added (new programs)</b>	<b>Date Removed</b>
SDGE3257	SW-WE&T-Strategic Planning	1/1/2013	N/A
SDGE3259	SW-ME&O	1/1/2013	N/A
SDGE3260	Local-IDSM-ME&O-Local Marketing (EE)	1/1/2013	N/A
SDGE3261	Local-IDSM-ME&O-Behavioral Programs (EE)	1/1/2013	N/A
SDGE3262	SW-FIN-On-Bill Finance	1/1/2013	N/A
SDGE3264	SW-FIN-New Finance Offerings CHEEF & Funds Reserved	1/1/2013	N/A
SDGE3266	LInstP-CA Department of Corrections Partnership	1/1/2013	N/A
SDGE3267	LInstP-California Community College Partnership	1/1/2013	N/A
SDGE3268	LInstP -UC/CSU/IOU Partnership	1/1/2013	N/A
SDGE3269	LInstP-State of California/IOU Partnership	1/1/2013	N/A
SDGE3270	LInstP-University of San Diego (USD) Partnership	1/1/2013	N/A
SDGE3271	LInstP-San Diego County Water Authority Partnership	1/1/2013	N/A
SDGE3272	LGP-City of Chula Vista Partnership	1/1/2013	N/A
SDGE3273	LGP-City of San Diego Partnership	1/1/2013	N/A
SDGE3274	LGP-County of San Diego Partnership	1/1/2013	N/A
SDGE3275	LGP-Port of San Diego Partnership	1/1/2013	N/A
SDGE3276	LGP-SANDAG Partnership	1/1/2013	N/A
SDGE3277	LGP-SEEC Partnership	1/1/2013	N/A
SDGE3278	LGP-Emerging Cities Partnership	1/1/2013	N/A
SDGE3279	(3P) Res-Comprehensive Manufactured-Mobile Home	1/1/2013	N/A
SDGE3280	(3P) Innovative Designs for Energy Efficiency Activities (IDEEA 365)	1/1/2013	N/A
SDGE3281	EM&V-Evaluation Measurement and Verification	1/1/2013	N/A
SDGE3282	SW-IDSM-IDSM	1/1/2013	N/A
SDGE3288	Customer Relationship Management (CRM)/Energy Efficiency Collaboration Platform (EECP)	1/1/2013	N/A



<b>Program ID</b>	<b>Program Name</b>	<b>Date Added (new programs)</b>	<b>Date Removed</b>
SDGE3291	SW-IND-Customer Services-Pump Test Services	1/1/2013	N/A
SDGE3292	SW-COM-Customer Services-Pump Test Services	1/1/2013	N/A
SDGE3293	SW-CALS Residential HVAC-HVAC Core	1/1/2013	N/A
SDGE3296	SW-FIN-New Finance Offerings Small Business Lease Off Bill	9/19/2013	N/A
SDGE3297	SW-FIN-New Finance Offerings Fin Pilot Cr Enhancement SFLP	9/19/2013	N/A
SDGE3298	SW-FIN-New Finance Offerings Med/Large OBR	9/19/2013	N/A
SDGE3299	SW-FIN-New Finance Offerings MMMFP OBR	9/19/2013	N/A
SDGE3300	SW-FIN-New Finance Offerings Small Business Lease OBR	9/19/2013	N/A
SDGE3301	SW-FIN-New Finance Offerings Small Business Loan OBR	9/19/2013	N/A
SDGE3302	SW-CALS-Res Upstream HVAC Equipment Incentive	7/1/2014	N/A
SDGE3303	SW-CALS-Res HVAC Code Compliance Incentive	7/1/2014	N/A
SDGE3307	(3P) Zero Energy Loss Drain Adoption	9/1/2014	Closed by Advice Letter 3090-E 6/20/17
SDGE3308	SW-FIN- New Finance Offerings Finance ME&O	9/19/2013	N/A
SDGE3309	Sustainable Labs Program	2/10/2015	Consolidated with Program SDGE3217 as filed in Advice Letter 2951-E/2515-G 9/1/16
SDGE3310	(3P) Multifamily Heat Pump Optimizer	3/10/2015	N/A
SDGE3311	(3P) Energy Advantage Program (EAP)	11/25/2015	N/A
SDGE3312	SW-FIN-New Finance Offerings Finance Pilot IT Support	9/19/2013	N/A
SDGE3313	Locational Energy Efficiency (LEE)	8/10/2015	N/A
SDGE3317	HOPPs Retrocommissioning (RCx)	Approved by Advice Letter 2864-E-A 7/27/16	N/A
SDGE3318	HOPPs Multifamily	Approved by Advice Letter 2865-E-C 9/18/16	N/A
SDGE3324	Water Energy Nexus Initiatives	4/21/17	N/A

## **APPENDIX B – Updated December 2017 Monthly Report**

The final SDG&E December 2017 monthly report can be found in the Monthly Reports section of the CPUC's CEDARS website.

<https://cedars.sound-data.com/>

**Confidential pursuant to PUC §583, GO 66-D, and D.17-09-023, and all other applicable protections.**

**SDG&E Third Party Programs**

Pursuant to Ordering Paragraph 8 of Commission D.18-01-004, SDG&E provides the following preliminary list of its Third Party Programs in place during program year 2018.

Program ID	Program Name	Primary Sector (Market Segment)	Sector (Sub-segment / Type of Customers)	Delivery Channel [1]	Vendor	Length	Dollar Value
SDGE3211	Local-CALS - Middle Income Direct Install (MIDI)	Residential	Residential	Midstream	Energy Efficiency Inc	2 Years, 0 Months	
SDGE3212	SW-CALS – Residential HVAC-QI/QM	Residential	Residential	Downstream	DNV GL Energy Services USA Inc	6 Years, 3 Months	
SDGE3224	SW-COM-Deemed Incentives-HVAC	Non-Residential	Commercial	Downstream	CLEAResult	2 Years, 2 Months	
	SW-COM-Deemed Incentives-HVAC	Non-Residential	Commercial	Downstream		7 Years, 0 Months	
SDGE3226	SW-COM Direct Install	Non-Residential	Commercial	Downstream	Matrix Energy Services Inc	2 Years, 2 Months	
	SW-COM Direct Install	Non-Residential	Commercial	Downstream	Willdan Energy Solutions	2 Years, 2 Months	
	SW-COM Direct Install	Non-Residential	Commercial	Downstream	Staples & Associates	2 Years, 2 Months	
	SW-COM Direct Install	Non-Residential	Commercial	Downstream	Matrix Energy Services Inc	1 Year, 8 Months	
	SW-COM Direct Install	Non-Residential	Commercial	Downstream	Willdan Energy Solutions	1 Year, 8 Months	
	SW-COM Direct Install	Non-Residential	Commercial	Downstream	Staples & Associates	1 Year, 8 Months	
SDGE3230	SW-IND-Customer Services-Audits CIEEP	Non-Residential	Industrial		Onsite Energy Corp	8 Years, 3 Months	
SDGE3235	SW-AG-Customer Services-Pump Test Services	Non-Residential	Agricultural		Lincus Inc	3 Years, 8 Months	
SDGE3291	SW-IND-Customer Services-Pump Test Services	Non-Residential	Industrial				
SDGE3292	SW-Com-Customer Services-Pump Test Services	Non-Residential	Commercial				
SDGE3279	3P-Res-Comprehensive Manufactured-Mobile Home	Residential	Residential	Downstream	Eagle Systems International Inc.	2 Years, 2 Months	
	3P-Res-Comprehensive Manufactured-Mobile Home	Residential	Residential	Downstream		7 Years, 0 Months	
SDGE3311	3P - Energy Advantage Program EAP	Non-Residential	Commercial		Aptim Environmental & Infrastructure	4 Years, 2 Months	
SDGE3317	HOPPs - Building Retro-Commissioning	Non-Residential	Commercial	Downstream	CLEAResult	2 Years, 2 Months	
SDGE3318	HOPPs - Multi Family	Residential	Residential	Downstream	Eagle Systems International Inc	2 Years, 3 Months	
SDGE3322	Streamlined AG Efficiency (SAE)	Non-Residential	Agricultural		Cascade Energy Inc.	2 Years, 1 Months	
SDGE3217	SW-COM-Customer Services- Audits	Non-Residential	Commercial		Empowered Solutions	2 Years, 9 Months	
SDGE3229	SW-IND-Customer Services-Audits	Non-Residential	Industrial				
SDGE3217	SW-COM-Customer Services- Audits	Non-Residential	Commercial		Information & Energy Services Inc	2 Years, 9 Months	
SDGE3229	SW-IND-Customer Services-Audits	Non-Residential	Industrial				
SDGE3217	SW-COM-Customer Services- Audits	Non-Residential	Commercial		kW Engineering	2 Years, 9 Months	
SDGE3229	SW-IND-Customer Services-Audits	Non-Residential	Industrial				
SDGE3217	SW-COM-Customer Services- Audits	Non-Residential	Commercial		PL Energy	2 Years, 9 Months	
SDGE3229	SW-IND-Customer Services-Audits	Non-Residential	Industrial				
SDGE3217	SW-COM-Customer Services- Audits	Non-Residential	Commercial		Willdan Energy Solutions	2 Years, 9 Months	
SDGE3236	SW-AG-Customer Services-Audits	Non-Residential	Agricultural				
SDGE3229	SW-IND-Customer Services-Audits	Non-Residential	Industrial				
SDGE3236	SW-AG-Customer Services-Audits	Non-Residential	Agricultural		Base Energy Inc	2 Years, 9 Months	
SDGE3229	SW-IND-Customer Services-Audits	Non-Residential	Industrial				
SDGE3236	SW-AG-Customer Services-Audits	Non-Residential	Agricultural		Aptim Environmental & Infrastructure	2 Years, 9 Months	
SDGE3229	SW-IND-Customer Services-Audits	Non-Residential	Industrial				

[1] Programs without a delivery mechanism are non-resource programs.

**APPENDIX D – Table 3 – Expenditures**

**Table 3**  
**2017 Expenditures, including expenditures on past cycle commitments paid in 2017**

IOU	Program ID	Program Name  (Add rows to include all programs)	Program Implementer  (Use Drop Down Menu)	Market Sector  (Use Drop Down Menu)	ESPI Program Category  (Use Drop Down Menu)	Delivery Channel [1]  (Use Drop Down Menu)	Authorized/Forecast Budget		Total 2017 Expenditures (broken out by budget-year funding source)													
							2017 Adopted Budget (EE: AL 2951-E-A/2512-G-A) (SW ME&O: AL 3125-E/2615-G) (ESA:AL 3065-E/2568-G)	2017 Administrative Cost (forecast as per budget Advice Letters)	Administrative [2]				Direct Implementation				PA Administered ME&O		SW ME&O	EM&V		On Bill Financing Loan Pool
									Non-IOU Implementer		IOU		Non-Incentive		Incentives & Rebates		2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]		2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]	
									2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]	2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]	2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]								
		IOU/PA Programs					71,942,739	5,779,685	-	-	-	5,616,360	474,339	21,095,995	1,425,226	40,704,057	-	1,571,979				
	3201	SW-CALS-Energy Advisor-HEES, UAT	IOU	Residential	Resource		360,091	23,420	-	-	-	7,562	-	61,507	-	-	-	45,821				
	3203	SW-CALS-Plug Load and Appliances-HEER	IOU	Residential	Resource	Downstream	6,515,853	294,486	-	-	-	156,343	-	1,519,352	-	1,056,248	-	258,676				
	3204	SW-CALS-Plug Load and Appliances-POS Rebates	IOU	Residential	Resource	Midstream	625,511	48,551	-	-	-	56,950	-	139,809	-	986,083	-	-				
	3205	SW-CALS-Plug Load and Appliances-BCE	IOU	Residential	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3207	SW-CALS-MFEER	IOU	Residential	Resource	Downstream	3,400,850	270,030	-	-	-	692,803	-	2,525,076	-	2,364,973	-	286,545				
	3208	SW-CALS - EUC WHRP - Basic	IOU	Residential	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3209	SW-CALS - EUC WHRP - Advanced	IOU	Residential	Resource	Downstream	3,727,980	152,969	-	-	-	192,392	-	1,302,870	-	1,304,365	-	18,938				
	3210	SW-CALS - EUC WHRP - Multifamily	IOU	Residential	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3213	SW-CALS - CAHP/ESMH-CA Advanced Homes	IOU	Residential	Resource	Upstream	1,712,517	99,491	-	-	-	127,335	-	350,216	265,299	1,926,723	-	13,162				
	3214	SW-CALS - CAHP/ESMH-E Star Manufactured Homes	IOU	Residential	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3215	SW-COM-Strategic Energy Management	IOU	Commercial	Resource		275,034	28,460	-	-	-	-	-	-	-	-	-	-				
	3216	SW-COM-Customer Services-Benchmarking	IOU	Commercial	Resource		124,911	13,319	-	-	-	8,511	-	47,085	-	-	-	-				
	3217	SW-COM-Customer Services- Audits NonRes	IOU	Commercial	Resource		1,371,908	131,085	-	-	-	50,339	-	767,167	-	-	-	3,012				
	3220	SW-COM-Calculated Incentives-Calculated	IOU	Commercial	Resource	Downstream	6,686,489	363,291	-	-	-	233,713	-	1,013,983	946,234	2,592,602	-	8,110				
	3222	SW-COM-Calculated Incentives-Savings by Design	IOU	Commercial	Resource	Upstream	4,508,534	263,652	-	-	-	150,340	-	636,504	205,375	1,858,381	-	5,061				
	3223	SW-COM-Deemed Incentives-Commercial Rebates	IOU	Commercial	Resource	Downstream	10,749,066	546,192	-	-	-	192,013	-	1,297,061	-	1,204,611	-	31,732				
	3225	SW-COM-Deemed Incentives-HVAC Core	IOU	Commercial	Resource		283,260	19,319	-	-	-	12,991	-	125,339	-	-	-	-				
	3227	SW-IND-Strategic Energy Management	IOU	Industrial	Resource		275,034	28,460	-	-	-	15,708	5,947	122,160	-	-	-	2,770				
	3228	SW-IND-Customer Services-Benchmarking	IOU	Industrial	Resource		60,281	6,019	-	-	-	3,596	-	14,846	-	-	-	-				
	3229	SW-IND-Customer Services-Audits NonRes	IOU	Industrial	Resource		467,704	28,311	-	-	-	9,800	-	140,069	-	-	-	-				
	3231	SW-IND-Calculated Incentives-Calculated	IOU	Industrial	Resource	Downstream	1,056,534	76,209	-	-	-	37,852	-	290,322	8,318	8,318	-	2,120				
	3233	SW-IND-Deemed Incentives	IOU	Industrial	Resource	Downstream	839,427	74,995	-	-	-	71,295	-	355,239	-	29,738	-	1,736				
	3234	SW-AG-Customer Services-Benchmarking	IOU	Agricultural	Resource		55,674	5,600	-	-	-	3,419	-	13,436	-	-	-	-				
	3236	SW-AG-Customer Services-Audits	IOU	Agricultural	Resource		106,114	25,032	-	-	-	2,504	-	18,229	-	-	-	1,736				
	3237	SW-AG-Calculated Incentives-Calculated	IOU	Agricultural	Resource	Downstream	151,476	14,587	-	-	-	8,331	-	65,737	-	-	-	-				
	3239	SW-AG-Deemed Incentives	IOU	Agricultural	Resource	Downstream	423,370	28,088	-	-	-	15,367	-	70,874	-	156,730	-	1,736				
	3240	SW-Lighting-Lighting Market Transformation	IOU	Cross Cutting	Resource		951,807	35,066	-	-	-	2,916	-	61,984	-	-	-	65				
	3241	SW-Lighting-Lighting Innovation-ETPC MD	IOU	Cross Cutting	Resource		1,233,566	46,712	-	-	-	10,555	-	115,911	-	100,000	-	-				
	3242	SW-Lighting-Lighting Innovation-ETPC Pilots	IOU	Cross Cutting	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3243	SW-Lighting-Lighting Innovation-ETPC Advanced LED	IOU	Cross Cutting	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3244	SW-Lighting-Lighting Innovation-ETPC Plug-In Lamp Exchange	IOU	Cross Cutting	Non-Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3245	SW-Lighting-Primary Lighting	IOU	Cross Cutting	Resource	Upstream	11,602,643	468,441	-	-	-	1,215,598	-	200,483	-	27,070,026	-	71,249				
	3246	SW-ET-Technology Introduction Support	IOU	Cross Cutting	Non-Resource		432,832	31,849	-	-	-	23,045	-	365,206	-	-	-	-				
	3247	SW-ET-Technology Assessment Support	IOU	Cross Cutting	Non-Resource		737,262	44,961	-	-	-	37,654	-	598,553	-	-	-	-				
	3248	SW-ET-Technology Deployment Support	IOU	Cross Cutting	Non-Resource		199,980	14,199	-	-	-	9,460	-	115,314	-	-	-	-				
	3249	SW C&S - Building Codes & Compliance Advocacy	IOU	Cross Cutting	C&S		307,839	39,024	-	-	-	13,441	12,498	175,257	-	-	-	-				
	3250	SW C&S - Appliance Standards Advocacy	IOU	Cross Cutting	C&S		315,428	35,385	-	-	-	38,062	380,000	660,452	-	-	-	-				
	3251	SW C&S - Compliance Enhancement	IOU	Cross Cutting	C&S		289,671	32,931	-	-	-	12,907	53,400	232,768	-	-	-	-				
	3252	SW C&S - Reach Codes	IOU	Cross Cutting	C&S		66,864	8,061	-	-	-	1,231	-	14,825	-	-	-	-				
	3253	SW C&S - Planning Coordination	IOU	Cross Cutting	C&S		55,907	9,451	-	-	-	1,388	-	17,772	-	-	-	-				
	3254	SW-WE&T-Centergies	IOU	Cross Cutting	Non-Resource		4,023,000	644,563	-	-	-	512,682	-	2,502,193	-	-	-	189,184				
	3255	SW-WE&T-Connections	IOU	Cross Cutting	Non-Resource		774,000	59,960	-	-	-	85,319	-	708,839	-	-	-	14,465				
	3257	SW-WE&T-Strategic Planning	IOU	Cross Cutting	Non-Resource		100,000	13,338	-	-	-	4,258	-	33,754	-	-	-	-				
	3260	Local-IDSM-ME&O-Local Marketing (EE)	IOU	Cross Cutting	Non-Resource		1,215,075	156,556	-	-	-	79,312	22,494	406,656	-	-	-	585,138				
	3261	Local-IDSM-ME&O-Behavioral Programs (EE)	IOU	Residential	Resource	Downstream	3,308,643	282,844	-	-	-	161,275	-	3,345,860	-	-	-	28,104				
	3262	SW-FIN-On-Bill Finance (1)	IOU	Commercial	Resource		420,520	52,468	-	-	-	35,322	-	268,205	-	-	-	1,636				
	3282	SW-IDSM-IDSM	IOU	Cross Cutting	Non-Resource		391,814	145,326	-	-	-	99,319	-	214,770	-	-	-	-				
	3288	CRM	IOU	Cross Cutting	Non-Resource		1,067,414	1,067,414	-	-	-	1,199,553	-	-	-	-	-	-				
	3293	SW-CALS - Residential HVAC-HVAC Core	IOU	Residential	Resource		117,755	7,563	-	-	-	9,671	-	91,299	-	-	-	-				
	3302	RES Upstream HVAC Incentive Program	IOU	Residential	Resource	Upstream	87,488	13,233	-	-	-	9,283	-	32,365	-	45,260	-	982				
	3303	HVAC To Code Compliance Incentive Program	IOU	Residential	Resource		68,282	7,392	-	-	-	3,854	-	31,666	-	-	-	-				
	3313	Locational Energy Efficiency	IOU	Cross Cutting	Non-Resource		397,328	21,381	-	-	-	1,090	-	24,982	-	-	-	-				
	3315	HOPPs - Tiered Custom	IOU	Cross Cutting	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
	3316	HOPPs - Business Equipment Early Retirement	IOU	Cross Cutting	Resource		-	-	-	-	-	-	-	-	-	-	-	-				
		Local Government Partnership Programs					8,807,702	706,510	-	397,127	-	591,022	1,868,776	7,624,750	-	-	-	134,521				
	3266	UnstP-CA Department of Corrections Partnership	LGP/SIP	Public	Resource		106,820	30,247	-	-	-	7,843	-	13,960	-	63,658	-	-				
	3267	UnstP-California Community College Partnership	LGP/SIP	Public	Resource		222,888	64,573	-	-	-	6,787	-	21,947	-	170,034	-	363				
	3268	UnstP-UC/CSU/IOU Partnership	LGP/SIP	Public	Resource		231,027	45,865	-	-	-	36,551	-	24,140	-	202,756	-	-				
	3269	UnstP-State of California /IOU	LGP/SIP	Public	Resource		132,799	20,524	-	-	-	5,422	-	12,996	-	54,592	-	36				
	3270	UnstP-University of San Diego Partnership	LGP/SIP	Public	Resource		658,548	43,857	-	-	-	17,490	-	39,926	183,665	662,840	-	12,027				
	3271	UnstP-San Diego County Water Authority Partnership	LGP/SIP	Public	Resource		423,573	54,348	-	-	-	47,606	173,796	334,010	-	-	-	-				
	3272	LGP- City of Chula Vista Partnership	LGP/SIP	Public	Resource		1,769,590	88,921	-	-	-	100,867	114,629	497,037	1,791,924	-	-	45,094				
	3273	LGP- City of San Diego Partnership	LGP/SIP	Public	Resource		1,683,813	88,610	-	-	-	132,957										

**Table 3**  
**2017 Expenditures, including expenditures on past cycle commitments paid in 2017**

							Authorized/Forecast Budget	Total 2017 Expenditures (broken out by budget-year funding source)																
IOU	Program ID	Program Name (Add rows to include all programs)	Program Implementer (Use Drop Down Menu)	Market Sector (Use Drop Down Menu)	ESPI Program Category (Use Drop Down Menu)	Delivery Channel [1] (Use Drop Down Menu)	2017 Adopted Budget (EE: AL 2951-E-A/2512-G-A) (SW ME&O: AL 3125-E/2615-G) (ESA:AL 3065-E/2568-G)	2017 Administrative Cost (forecast as per budget Advice Letters)	Administrative [2]				Direct Implementation				PA Administered ME&O		SW ME&O	EM&V		On Bill Financing Loan Pool		
									Non-IOU Implementer		IOU		Non-Incentive		Incentives & Rebates		2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]		2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]		2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]
									2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]	2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]	2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]	2017 Expenditures from pre-2017 budgets	2017 Expenditures from 2017 Budget [3]								
	3218	SW-COM-Customer Services-Audits Healthcare Energy Efficiency	Third Party	Commercial	Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3219	SW-COM-Customer Services-Audits Lodging Energy Efficiency	Third Party	Commercial	Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3221	SW-COM-Calculated Incentives-RCx	Third Party	Commercial	Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3224	SW-COM-Deemed Incentives-HVAC Commercial	Third Party	Commercial	Resource	Downstream	2,613,395	195,131	138,430	5,688	-	856,514	16,096	1,360,877	41,529	-	-	-	-	-	-	-	-	
	3226	SW-COM Direct Install	Third Party	Commercial	Resource		9,928,782	28,755	-	25,231	-	3,446,863	-	371,327	11,051	-	-	-	-	-	-	-	-	
	3230	SW-IND-Customer Services-Audits CIEEP	Third Party	Industrial	Resource		428,262	24,615	-	-	-	22,619	-	-	-	-	-	-	-	-	-	-	-	
	3235	SW-AG-Customer Services-Pump Test Services	Third Party	Agricultural	Resource		242,974	21,298	-	570	-	548	-	-	-	-	-	-	-	-	-	-	-	
	3256	SW-WE&T-Connections K-12	Third Party	Residential	Non-Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3279	3P-Res-Comprehensive Manufactured-Mobile Home	Third Party	Residential	Resource	Downstream	7,671,110	11,308	345,026	8,487	-	3,850,373	-	59,912	216,905	-	-	-	-	-	-	-	-	
	3280	3P-IDEEA	Third Party	Cross Cutting	Resource		1,150,533	114,811	-	8,005	-	97,166	-	-	-	-	-	-	-	-	-	-	-	
	3291	SW-Ind-Customer Services-Pump Test Services	Third Party	Industrial	Resource		223,744	21,090	-	514	-	17,938	-	-	-	-	-	-	-	-	-	-	-	
	3292	SW-Com-Customer Services-Pump Test Services	Third Party	Commercial	Resource		183,267	18,995	-	2,530	42,389	428,338	-	-	-	-	-	-	-	-	-	-	-	
	3306	3P-RES-Splash	Third Party	Residential	Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3307	3P-ZELDA	Third Party	Commercial	Resource	Downstream	202,888	17,764	126	5,099	1,222	27,971	-	1,050	198	-	-	-	-	-	-	-	-	
	3309	3P - Sustainable Labs Program	Third Party	Industrial	Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3310	3P - Multifamily Heat Pump Optimizer	Third Party	Residential	Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3311	3P-Energy Advantage Program (EAP)	Third Party	Commercial	Non-Resource		562,251	56,001	(434)	46,887	-	370,595	-	-	7,370	-	-	-	-	-	-	-	-	
	3317	HOPPs - Building Retro-Commissioning	Third Party	Commercial	Resource	Downstream	2,001,167	63,769	-	56,459	-	991,654	-	-	1,280	-	-	-	-	-	-	-	-	
	3318	HOPPs - Multi Family	Third Party	Residential	Resource	Downstream	1,376,354	52,698	-	49,958	-	88,412	-	989,051	-	-	-	-	-	-	-	-	-	
	3319	HOPPs - BES - To Code LED Fixtures	Third Party	Commercial	Resource		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3322	STREAMLINED AG EFFICIENCY (SAE) PRGM	Third Party	Agricultural	Resource		-	-	-	34,728	-	145,014	-	-	6,000	-	-	-	-	-	-	-	-	
	3323	MID-MKT DYNAMIC EE PROGRAM	Third Party	Commercial	Resource		-	-	-	669	-	21,043	-	-	-	-	-	-	-	-	-	-	-	
		RENs and CCA (Non-IOU Programs)																						
		<b>Subtotal</b>					<b>108,387,342</b>	<b>7,258,770</b>	<b>-</b>	<b>932,527</b>	<b>-</b>	<b>6,463,423</b>	<b>2,386,726</b>	<b>39,584,184</b>	<b>1,441,322</b>	<b>43,787,184</b>	<b>-</b>	<b>2,032,325</b>						
		EM&V - IOU																					607,426	
	3281	EM&V - CPUC Staff					4,658,311	4,658,311														2,981,782	80,213	
		OBF Loan Pool					26,003,565	-															\$1,324,981	
		<b>Total EE Portfolio Expenditures</b>					<b>139,049,218</b>	<b>11,917,081</b>	<b>-</b>	<b>932,527</b>	<b>-</b>	<b>6,463,423</b>	<b>2,386,726</b>	<b>39,584,184</b>	<b>1,441,322</b>	<b>43,787,184</b>	<b>-</b>	<b>2,032,325</b>	<b>-</b>	<b>2,981,782</b>	<b>687,639</b>			
	3259	SW ME&O (Energy Efficiency portion only)					2,793,920	-			128,699						2,531,312							
	3324	Water Energy Nexus																						
		Finance Pilots					3,410,657	139,173	-	-	-	53,688	-	564,680	-	-	-	411,681						

Notes:  
 [1] Programs without a delivery mechanism are non-resource programs.  
 [2] The Administrative Cost amount categorized on this Table doesn't parallel how the Administrative cost is categorized on the Quarterly CAP and Target Table. The Administrative cost on the CAP and Target Table recategorizes the Administrative costs associated with the Target Exempt Programs per D.09-09-047. in the Direct Implementation Target Exempt Programs category. In addition the Cap and Target Table includes all Local Program Expenditures (IOU Local and LGP's) in the Local Program Expenditures column which is different than this Table 3.  
 [3] Committed Funds Expenditures are included in the amount reported in the columns "2017 Expenditures from 2017 Budget".