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

SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M) ENERGY EFFICIENCY PROGRAMS ANNUAL REPORT 2021 RESULTS

PUBLIC VERSION

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Pursuant to the *Administrative Law Judge's Ruling Adopting Annual Reporting Requirements for Energy Efficiency and Addressing Related Reporting Issues*, dated August 8, 2007 and Decision (D.) 18-01-004, D.18-05-041 and the *Email Ruling Granting Extension Request For Energy Efficiency Annual Report Submittal*, issued on March 25, 2022, San Diego Gas & Electric Company (SDG&E) hereby submits its Annual Report for 2021 Energy Efficiency programs and accomplishments.

SDG&E's Annual Report provides detailed portfolio, sector and program-level information on the accomplishments of SDG&E's EE Portfolio in 2021, including data on energy savings, budget, cost-effectiveness and metrics. SDG&E's Annual Report also addresses 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, as required by D.16-06-010 Ordering Paragraph (OP) 9. This Annual Report also includes Performance Metrics and 2021 performance results as required in D.18-05-041, OP 9.

Finally, pursuant to OP 8 of D.18-01-004, the dollar amounts of third-party contracts (provided in aggregate) are included in Appendix A. As directed by the Investor Owned Utility (IOU) who is acting as the Statewide lead, particular contract dollar amounts will be provided

confidentially to the California Public Utilities Commission (Commission or CPUC). SDG&E is filing the public and confidential versions of the report showing current Third-Party program contracts. The public version of the report will be served. SDG&E's Annual Report and associated documents are also uploaded and available for viewing on the Commission's data systems: (1) California Energy Data and Reporting System (CEDARS) website; and (2) California Energy Efficiency Statistics (EESTATs). The report and the Updated Set of Final Metrics are available on SDGE.com.

Respectfully submitted,

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ENERGY EFFICIENCY PROGRAMS ANNUAL REPORT 2021 RESULTS

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

2021 proved to be a year of continued collective challenges due to the global COVID-19 pandemic and its economic impact in our region. Notwithstanding these issues, SDG&E made substantial progress delivering energy and bill savings to its residential and non-residential customer base through its comprehensive portfolio of local and statewide Energy Efficiency, Codes and Standards and IDSM programs.

SDG&E's core programs achieved approximately 11.1 MW (65% of 17 MW), 73 GWH (81% of 90 GWH) and 3.1 million therms (141% of 2.2 million therms). Through the combined program efforts of SDG&E's core portfolio and impacts from the Codes & Standards program, SDG&E customers saved approximately 600 gigawatt hours (GWH), 100 megawatts (MW) and 6.7 million therms. The gas and electric savings achieved amidst a global pandemic and its impact on San Diego's economy and customers while also standing up several new Third-Party implemented programs reflects the effort and success of SDG&E's strategies and interventions. The portfolio lifecycle energy savings resulted in a reduction of approximately 148,000 tons of CO2, the equivalent of removing approximately 31 thousand cars from the road.[1] SDG&E's energy efficiency portfolio provided potential customer lifecycle bill savings of approximately $2.2 billion.

Noteworthy highlights of SDG&E's 2021 programs are:

- In response to the protracted economic impacts of COVID-19 on SDG&E's customers in 2021, SDG&E continued to add measures and increase customer and contractor incentives for achieving installation targets on certain measures within our legacy programs to encourage adoption. SDG&E worked with its Third-Party Implementers to help encourage greater adoption of measures during the economic downturn.

[1] Total number of cars was calculated using the Environmental Protection Agency (GHG) calculator at https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

- SDG&E continued with inspections in the virtual environment, reducing delays in project validation. Where appropriate and with customer consent, SDG&E integrated on-site inspections where possible. This allowed customers to receive rebates and incentive payments for completed projects and helped continue the adoption of energy efficiency in SDG&E's territory.

- In the Workforce Education & Training (WE&T) and Codes & Standards (C&S) programs, SDG&E continued to implement all trainings online to align with State and local pandemic protocols restricting in-person gatherings. In 2021, the programs recorded a higher annual participation rate as compared to the previous few years due to the trainings being conducted virtually versus in the classroom, as well as accommodated on-demand training in some instances. Overall participation enrollment in WE&T and C&S trainings combined increased by 13% compared to 2020. Customer satisfaction results for these trainings tracked above 85% for most of the year.

- SDG&E's Behavioral Program Home Energy Report, which was distributed to more than 750,000 of SDG&E residential customers in 2021, assisted residential customers in managing their energy use while living and working from home for much of 2021. The Home Energy Reports messaging continued to focus on COVID-19, work from home energy savings tips and energy efficiency messages and tips.

- In 2021, as the lead utility for Water Energy Nexus (WEN) measure package efforts, SDG&E maintained the Statewide measure package for these measures. SDG&E supported the testing of the WEN 2.0 calculator and began the transition-away from the master measure package to individual WEN measure packages, which will allow PAs to claim WEN embedded energy savings towards PA's energy efficiency goals.

- SDG&E continued to test various strategies for integrating demand response capability with existing energy efficiency activities throughout 2021. Three projects were selected to participate in the program based on audits completed through the Comprehensive Audit Program. One of these projects included the installation of energy efficient lighting and controls, replacement of two Heating Ventilation and Air Conditioning (HVAC) units, and installation of a new battery storage unit to offset energy demand during demand response events. The projects were completed in 2021. SDG&E also worked with its new Third-Party Implementers to incorporate Integrated Demand-Side Management (IDSM) into their programs.

- By the end of 2021, SDG&E successfully completed solicitations, filed contract advice letters (ALs) and received approval for two of its Third-Party Implemented programs. SDG&E's signed contracts contribute 51 percent of its 2022 portfolio

budget (73 percent including Assembly Bill (AB) 841 funds)[2] to Third-Party programs. As a result, several of SDG&E's legacy programs were ramped down in 2021 to accommodate the shift of customers to the respective Third-Party program. In 2021, SDG&E contracted for the following new Third-Party programs:

- K-12 Program, local
- Federal Program, local

Overall, through the activities SDG&E pursued in 2021, SDG&E continued to promote and sustain awareness of the benefits of energy efficiency and delivered savings. SDG&E concluded contracting for two local new Third-Party implemented programs and worked extensively with its implementers to develop and integrate new systems, processes, quality assurance and compliance standards to ensure alignment with State and Commission goals and prudent management of ratepayer funds. SDG&E also developed and implemented its own statistically based quality assurance plans that incorporate not only CPUC policy but also quality engineering principles and best practices.

SDG&E continued to focus on designing a comprehensive portfolio and future program solicitations including promoting and incentivizing fuel-substitution measures, to more effectively serve its customers and help them reduce their energy usage and achieve bill savings. Furthermore, SDG&E, as the designated statewide lead for HVAC, HVAC Residential Quality Installation and Quality Maintenance pilot (HVAC QI/QM) and Plug Load & Appliance (PLA) categories. coordinated with the other IOUs to assume responsibility for those statewide measure packages, transitioning from its past role as "measure adopter' to that of "measure developer" responsible for completing measure package updates and developing new measures. SDG&E

[2] D.21-01-004 at 18, states, "Section 1613 makes clear that the SRVEVR and SNPFA programs shall be considered a third-party program for compliance with D.16-08-019."

remains committed to supporting the State's goal of doubling energy efficiency savings by 2030, while prioritizing safety and convenience for its customers, contractors and stakeholders.

II. 2022 ENERGY EFFICIENCY PORTFOLIO OUTLOOK

SDG&E's energy efficiency programs will continue to advance local and state energy savings in 2022. SDG&E's objective is to continue the transition of its programs and offerings to a market-based delivery through the Third-Party Implementer model. 2021 marked the launch of two local and Statewide Third-Party implemented programs in the SDG&E service territory. While the market was refreshed with innovative aspects of Third-Party designed programs, it also experienced protracted ramp-up periods for certain programs in order to identify and incorporate new systems requirements and other compliant operational processes and procedures. In 2022, SDG&E will continue soliciting the market and execute new Third-Party contracts for additional programs, thereby outsourcing an even greater percentage of its portfolio. SDG&E will continue to implement its existing programs while concurrently soliciting and launching new ones and winding down legacy programs once the new market programs are launched.

The launch of the new Third-Party programs has broadened SDG&E's portfolio to reach more customers and provide a greater range of services to a more diverse customer base. Program Implementers will operate newly implemented programs that offer targeted services designed for specific market sectors. SDG&E has partnered with its Third-Party Implementers to set up processes and procedures that will ensure the success of the programs post-launch, as well as the continued development and optimization of its internal operations to focus on SDG&E's role as Portfolio Administrator. In 2022, SDG&E will continue diligent oversight to ensure implementers are on track to meet their program savings targets, remain cost-effective,

meet contract metrics and overcome challenges through mutual partnership. SDG&E's teams continue to collaborate with the other IOU's teams to ensure that Statewide program protocols related to savings attribution, customer data sharing, funding mechanisms and other program activities are coordinated, and established procedures and processes are followed and enhanced.

In 2021, SDG&E continued its commitment to delivering and supporting the goal set forth by the State of California to double energy efficiency by 2030. To that end, SDG&E is actively engaged with the CPUC to evolve the rolling portfolio business model. In the first quarter of 2022, SDG&E filed its 2024-2031 Business Plan and 4-year Budget Application for 2024-2027. SDG&E leveraged this opportunity to redesign and optimize its energy efficiency portfolio to incorporate new CPUC requirements such as the Market Support and Equity segments and the Total Systems Benefits metric for goal achievement. In addition, SDG&E is committed to:

- Reinforce commitment to **innovation** in customer offerings and technology advancements, including promoting fuel-substitution measures through effective collaboration with 3PIs
- **Mobilize end-to-end energy efficiency** markets and participants, including OEMs, program implementers, builders, contractors, local governments, Community Choice Aggregators (CCAs), Regional Energy Networks (RENs) and end-user customers.
- Encourage and facilitate **greater outreach and education** to all providers and participants, with special emphasis on facilitating accessibility of programs and offerings to customers and providers in **underserved communities.**
- Employ strategies to help reduce the high cost of certain long-life electric measures and associated customer investments required for **fuel-substitution**.

On September 30, 2020, AB 841 established the School Energy Efficiency Stimulus Programs, which is comprised of the School Reopening Ventilation and Energy Efficiency Verification and Repair (SRVEVR) and the School Noncompliant Plumbing Fixture and Appliance (SCPFA) programs. These programs are being administered by the California Energy

Commission (CEC) and coordinated with the IOU's local programs in their respective service territories for the 2021 – 2023 timeframe. Funding for these programs is generated by energy efficiency 2020-2022 uncommitted unspent program funds and a specified percentage of the difference between the IOUs authorized Business Plan budgets and the approved energy efficiency budget over the program cycle. These program funds are considered Third-Party program funding and as such count towards the IOU's Third-Party program compliance requirements. SDG&E began transferring quarterly program funds to the CEC on April 1, 2021. SDG&E will coordinate its applicable programs with the CEC to provide comprehensive energy efficiency services and support to the schools in its service territory.

The impacts of COVID-19 on San Diego's economy continued to affect customer investments in energy efficiency in 2021. SDG&E is cautiously optimistic about economic recovery in the region in 2022, and is focused on promoting energy efficiency adoption among its customers. SDG&E expects to leverage the ramp-up strategies and tools that are in place and develop new ones to support its customers, contractors and stakeholders.

III. RESIDENTIAL ENERGY EFFICIENCY PROGRAMS

A. 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 IOUs share similar program theories, goals, and design elements, each IOU may implement a unique tool by a different vendor.

In 2021, 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, Integrated Demand Side Management (IDSM) opportunities. Additional tools available to customers through the program include usage analysis and household usage data 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 2021, SDG&E promoted the home audit tool exclusively through the contracted vendor associated with the Home Energy Report Program (HER) and leveraged the report recipient list to engage a majority of residential customers. Implemented strategies included:

- Display ads ran in August & September garnering 2,442,012 impressions, 2,046 clicks;
- Social media ran August & September garnering 301,509 impressions, 7,523 clicks;
- Organic Social Media posts (Instagram, Facebook & Twitter) on Feb 10, April 29, June 26, August 2, and November 9;
- Emails – 40% open rate;
- Added marketing module on HER digital reports;
- Updated website for better user experience; and
- Included link in Summer Tips emails

Challenges/Changes for 2021

Program year 2021 continued to include widely promoted energy efficiency alerts and online audits available on the HER customer platform to address potential energy usage increases due to COVID-19 restrictions during 2021. SDG&E is continuing to expand participation in the program to assist customers with recommendations on how to manage their energy usage and utilize tips and recommendations.

2021 Program Accomplishments

Marketing efforts noted above resulted in more than 14,996 completed audits and action plans for residential customers, triple the number of completions in 2020. Additionally, the conversion rate for those that began the online audits increased 7% over 2020 with an average of 93%.

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 rebates to customers, 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 rebates at checkout, removing traditional downstream program barriers such as limited impact and cumbersome customer application processes. POS is the main tool used for rebating energy efficient products for SDG&E's residential customers.

Implemented Strategies

In 2021, SDG&E's PLA - POS Subprogram continued to work with retailers and distributors to increase customer participation in midstream channels. The Program continued to make store visits and conduct in-store associate training, when safely possible, to ensure that retailers and distributor staff were well versed with the POS process and current offerings. In-store training consisted of meetings with store and/or department management, supervisors and sales associates to review program details and/or updates. PLA - POS signage in stores was updated when program changes occurred as well as when the program realized opportunities for increased customer awareness. When it was not possible to conduct in-store visits due to

COVID-19 safety guidelines, the Program developed other methods of keeping industry partners engaged through email and phone communications.

The program deployed various marketing campaigns to increase customer participation. For each measure category, pool pumps and water heaters, a different marketing effort was utilized. For the pool pump measure, the program deployed paid social and search to promote the pool pump rebate during the summer months. Lastly, SDG&E's heat pump water heater rebate was marketed through a combination of emails and a mailer specifically targeted to SDG&E's electric-only customers. SDG&E's marketing efforts, combined with an outreach campaign to local water heater installation companies, contributed to a notable increase in participation in the fourth quarter of 2021.

Challenges/Changes for 2022

SDG&E filed its Statewide PLA Advice Letter on January 28, 2022 and received approval on May 24, 2022. SDG&E expects the new program to be launched in 2022. To avoid confusion in the market, the PLA-POS program closed on December 31, 2021. All program shutdown activities were completed.

2021 Program Accomplishments

For 2021, the Program removed the smart thermostat measure that was a program measure from 2017-2020. The measures offered in 2021 consisted of pool pumps, gas water heaters and electric heat pump water heaters. In the third quarter, the Program removed the pool pump measure offering due to the measure moving to code.

Late in the first quarter, the Program received consistent updates from pool pump distributors about supply chain limitations and potential challenges to keeping qualifying products stocked due to the pandemic. This caused lower participation than expected as customers were not able to purchase and install qualifying pool pumps as readily as the previous

year. Due to this challenge, the Program was not able to employ as many marketing tactics as forecasted. To address these challenges, the Program focused its efforts on marketing products with high savings such as heat pump water heaters. While electric heat pump water heaters have been historically challenging to promote due to their relatively high cost, the program actively promoted this product amongst residential customers with electric water heating through strategic marketing tactics, such as partnering with A.O. Smith, a heat pump water heater manufacturer, on the deployment of a direct mailer. Through these campaigns, the program was able to more than double the electric heat pump water heater sales from the previous year.

In early 2021, the Program successfully updated rebate submission processes for the distributors offering the pool pump rebate. This improvement provided increased efficiency for the submission processor and encouraged further engagement and participation from the distributors. In 2021, the Program renewed the enrollment of pool pump participating distributors and retailers and enrolled one new distributor to better serve all SDG&E customers. Even with the challenges of COVID-19, a steady stream of sales continued to be submitted each month. More specifically, within the pool pump measure, the Program saw an approximately 11% increase in participation when compared against the first three quarters of 2020. Lastly, the heat pump water heater measure saw approximately a 70% increase in participation from the previous program year. This directly correlated to the various marketing tactics that were employed to spread awareness about the heat pump water heater rebate.

IV. COMMERCIAL ENERGY EFFICIENCY PROGRAMS

A. SDGE3217 SW-COM-Customer Services – Audits Non-Res

Program Description

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

Implemented Strategies

CAP had fewer audits performed at customer sites in 2021 compared to the last 2 years. The reduced number of total audits was mainly due to a decrease in ASHRAE Level 1 audits. Customers continued to participate with the ASHRAE Level 2 audits, which are generally more in-depth and costly as compared to Level 1. Vendors and SDG&E personnel continued to bring in qualified leads for the program, and customers were successful in submitting online audit

requests via SDG&E's website portal. Audits were performed for various business types including military, universities, Federal facilities and K-12 schools.

Challenges/Changes for 2022

With the launch of the new Third-Party programs rolling out in 2021, the CAP Commercial sector will no longer offer audits to the Non-Public, Federal and K-12 customers after 12/31/2021. Commercial customer(s) that seek an audit can do so by participating in the new Small or Large Commercial Third-Party programs launched on January 1, 2021, as well as the K-12 program that launched on November 1, 2021, and the Federal program that launched on January 1, 2022. The CAP will continue to service higher education as well as Local Government and Public sector customer(s) until the Third-Party program is launched for these respective sectors.

2021 Program Accomplishments

In 2021, SDG&E reviewed three large Public commercial audits that resulted in the customer's participation in SDG&E's rebate or incentive programs. Although SDG&E performed fewer audits in 2021 as compared to the last two years, the program improved the quality of audits as a result of previous customers' direct feedback. Program participants included the military, university, and community college.

B. SDGE3220 SW-COM-Calculated Incentives-Calculated

Program Description

The Calculated Incentives program 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 and federally mandated codes, industry-accepted performance standards or other baseline energy performance standards.

In 2021, the focus of the program moved from commercially classified customers to public sector customers due to the launch of new Third-Party programs serving the Commercial Sector. Projects that included commercial customers that were already in process were completed in 2021.

Implemented Strategies

SDG&E continued to offer virtual training for customers and trade professionals to reinforce and improve the knowledge of program participants on various details and requirements of the Calculated Incentives program. The virtual format provided flexibility by allowing external parties to participate in the training anytime. SDG&E also hosted bi-monthly meetings to review the program's project queue, and regularly followed-up with project sponsors and other stakeholders to ensure that projects could be processed and paid for in a timely manner.

Challenges/Changes for 2022

A significant limitation to recruiting new customers and increasing program participation was the partial ramp-down of the Calculated Incentives program due to new commercial Third-Party programs launching in January 2021. As a result, the program remains open to Local Government and Higher Education Public Sector customers only. SDG&E will continue to target eligible customers until the new Third-Party programs fully launch for these customers in 2022. SDG&E will continue to track Commercial Sector projects from installation to Measurement & Verification (M&V) and payment for customers who were contracted prior to December 31, 2021.

2021 Program Accomplishments

SDG&E continued to work closely with the CPUC's Custom Project Review (CPR) team to address questions and obtain guidance for existing projects. In 2021, the Calculated Incentives

program completed payments for twenty small local restaurant chain sites that required a one-year M&V period at post-installation to evaluate energy savings.

C. SDGE3222 SW-COM-Calculated Incentives – Savings by Design

Program Description

The Savings by Design (SBD) program served SDG&E's new construction segment. It promoted integrated building design by providing design assistance with energy efficient alternatives and owner incentives to participants who design spaces that perform at least 10% better than what is required in Title 24.

Implemented Strategies

The SBD program was closed to new enrollments in 2021, however, projects that were under contract and completed were inspected and processed for eligible incentive payments. The Statewide SBD team continued to collaborate to help transition the SBD program to be administered as a Statewide new construction program, the California Energy Design Assistance (CEDA) Program. The new Statewide New Construction program began in Q3 2021, thus SDG&E focused on providing close out dates for application submittals and contract agreements.

Additionally, projects in the early phases of planning in 2021 were reviewed and contracted according to program guidelines. Projects currently in the installation phase will be inspected as they are completed throughout 2022 –2024.

Challenges/Changes for 2022

As noted above, the SBD Program was closed to new enrollments throughout 2021, and the new Statewide program was launched for eligible new construction projects. Customers, design firms and account executives were referred to the CEDA Program to determine eligibility and installation guidelines.

2021 Program Accomplishments

SDG&E continued to qualify projects through the Systems approach when projects were not eligible for participation through the Whole Building approach. Standard communications were updated to help streamline project processes and ensure customers and design teams were notified of project status.

SDG&E worked with the Statewide SBD team and CPUC on various initiatives to assist with current and future new construction programs, including: (i) drafting project review requirements with the CPUC to ensure all projects are evaluated under consistent guidelines across the IOUs while also meeting CPUC's expectations; (ii) creating the Effective Useful Life (EUL) calculator to easily estimate a weighted project EUL value and be able to compare to the simple payback period, and (iii) determining if a single EUL value could be used across all SBD projects. Additionally, SDG&E revised its internal review workbook to ensure compliance with the new review items and procedures.

D. SDGE3223 SW-COM-Deemed Incentives – Commercial Rebates

Program Description

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

Implemented Strategies

In the first half of 2021, the Commercial Rebates Program continued with two separate program deliveries: the Instant Lighting Rebates Program, and the Energy Efficiency Business Rebates Program. The Instant Lighting Rebates Program utilizes a midstream delivery channel and 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. SDG&E closed the Instant Lighting Rebate Program on June 30, 2021, due to the launch of the Statewide Lighting Program. Non-lighting products continued to be offered in the Energy Efficiency Business Rebates Program, which utilized a downstream channel. To increase participation within the Energy Efficiency Business Rebates Program, SDG&E provided an incentive to trade professionals that installed certain measures such as industrial pipe insulation, process boilers, and large storage water heaters. The incentive to trade professionals was implemented to help spur project work and implementations for the customers. Additionally, SDG&E increased rebates on non-lighting measures as a limited time offer. The limited time offer marketing strategy was implemented to encourage customers to take full advantage of the increased rebate amounts.

Monthly training for trade professionals, which was moved to a virtual platform to encourage participation in 2020, continued into 2021. Program training provides a high-level overview of program components giving trade professionals the opportunity to participate. The virtual self-paced training courses have been well received.

Challenges/Changes 2022

In 2021, commercial, non-public customers were no longer served through the Energy Efficiency Business Rebates Program. Commercial Non-Public customers were directed to the new Third-Party Large Commercial Program which greatly decreased participation in this program. Public Sector customers will continue to be targeted through this program until a new program is launched after the solicitation process has been completed.

The Statewide HVAC and the Statewide Food Service programs launched in the third quarter of 2021, resulting in a decrease in customer participation for the non-lighting portion of the Energy Efficiency Business Program.

2021 Program Accomplishments

In response to the medical industry's need to store vaccines due to the COVID-19 pandemic, SDG&E added High Efficiency Ultra Low Temperature Freezers to the Energy Efficiency Business Rebates Program in 2021. To further facilitate implementation, the rebate amount for the High Efficiency Ultra Low Temperature Freezers was increased in mid-2021.

V. INDUSTRIAL ENERGY EFFICIENCY PROGRAMS

A. SDGE3227 SW-IND-Strategic Energy Management Program Description

The Statewide Industrial Strategic Energy Management (SEM) Program utilizes measurement and verification guidelines developed jointly with the other California IOUs and the CPUC. The SEM Program employs a holistic, whole-facility approach that uses dynamic baseline modeling and Normalized Metered Energy Consumption (NMEC) methodologies to determine savings from all program activities at a facility, including capital projects, behavioral, retro-commissioning and maintenance & operations. There are seven participating sites in SDG&E's SEM Program.

Implemented Strategies

SDG&E and its contracted implementer worked closely in 2021 to complete the third year of the SEM Program and continue into the fourth year with all seven participating sites continuing into 2021. Activities included workshops, Cycle 2-Year 1 completion reports, evaluating savings claims, and formulating robust Action Plans. Participants completed a variety of employee engagement activities, including compressed air leak campaigns, idea submission campaigns, and up-to-the-moment display of energy savings by project. The most prominent activities for participants in 2021 were the completion of their energy projects. Key activities completed in 2021 include:

- Development and Implementation of Cycle 2 Training Material

- Cycle 2 Treasure Hunt Reports
- Updated Opportunity Registers for each Participant
- Cycle 2-Year 1 Action Plans
- Energy Management Information Systems Assessment
- Integrated Demand-Side Management (IDSM) Education
- Workshop 1b, Save Energy Continuously
- Workshop 2a, Energy Efficiency in Design and Procurement
- Workshop 2b, Employee Competence in Energy Efficiency
- Workshop 3a, Competency Plans and How to Use Them

SDG&E's contracted implementer uses cloud-based SEM software for all participant-facing documents and information related to the SEM program. Participants track their energy models in cumulative-sums and other graphs through this software. An opportunity register is also available to participants, which provides awareness on potential savings, and is within the software, as are shared program documents. Opportunity registers are tied to the SEM software graphs, so that certain activities recorded in the register appear on the graphs, directly linking participants' actions to savings.

The energy management software used in the program includes information on energy savings persistence, which is generally described as "the change in savings throughout the functional life of a given efficiency measure or activity."[3] In fact, all participants identified an energy savings persistence strategy for all completed projects in 2021. The cohort is also using an additional persistence tracking tool, which lays out a calendar with required checks to validate energy savings persistence.

[3] Berkeley Lab, Energy Savings Lifetimes and Persistence: Practices, Issues and Data, (May, 2015) available at https://energy.lbl.gov/publications/energy-savings-lifetimes-and.

Five of the seven participants completed the first of four Cycle 2 milestones by February 15, 2021 and received $1,000 in incentives for each project completed. Milestones required updated production and energy usage data, updated opportunity registers, notes, and persistence strategies on all completed projects.

Challenges/Changes for 2022

At the end of July 2021, the program closed the first year of its second two-year cycle (Cycle 2-1) and stepped into another year of the cycle. With the initiation of Cycle 2, revised Industrial Strategic Energy Management Design and Measurement & Verification Guides were developed for use at the Statewide level. The revised guidelines brought a new set of challenges/changes the program began addressing in September 2021 and will continue to address in 2022. The newer areas of focus have been educating participants on the International Organization of Standardization (ISO) 50001 requirements and practices, implementing Integrated Demand Side Management strategies that bring additional energy savings, and in-turn developing a functional energy management system at each site.

Moving forward, the program plans to leverage involvement from a broader base of the participant's employees, bring critical operations/production personnel on board, and gain greater involvement from cohort members' executive sponsors to achieve additional energy savings.

2021 Program Accomplishments

During the first year of Cycle 2, the participants completed numerous large and complex BRO (Behavioral, Retrofit and Operational) projects. These efforts resulted in kWh and kW savings higher than projected targets. Participants from all seven sites finished the first year of Cycle 2 with many successes, and all seven decided to continue their participation in the program. Additionally, two of the seven participants added additional sites to the program, as

successes from prior years solidified their appreciation for the energy savings benefits that the program delivered to their organizations. Collectively, the seven participants completed 297 projects since the inception of the program, with 88 completed energy projects in 2021 and approximately 120 additional projects in progress.

SDG&E and its implementer also collaborated to create a new incentive and campaign for completing Action Plan items. The campaign, which was designed to encourage friendly peer pressure among sites, resulted in motivating and influencing the completion of Action Plan items that may not have otherwise been completed. As a result, the Action Plans will now be used for each phase rather than yearly (as the Design Guide calls for). This collaborative effort resulted in greater participation for all seven of SDG&E's cohort members and encouraged all Industrial SEM programs across the State to consider taking the same approach at leveraging the Action Plans in phases rather than annually.

B. SDGE 3229 SW-IND-Customer Services – Audits Non-Res Program Description

The Comprehensive Audit Program is an Integrated Demand-Side Management (IDSM) audit offered to Industrial customers. The program provides customers with a comprehensive audit report equivalent to an American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Level 1 or 2 report. SDG&E offers two types of audits: 1) ASHRAE Level 1 audit, which consists of a high-level walkthrough that provides an equipment inventory and high- level payback estimates of the identified energy efficient measures; and 2) ASHRAE Level 2, which is a more detailed analysis of selected measures with investment-grade savings and financial calculations and deliverables. The Level 2 audit is geared toward businesses that plan to implement recommended measures within one year of the audit. As an IDSM program, audit scope and reports for both Level 1 and Level 2 audits include energy efficiency, demand

response and distributed generation opportunities. These audits are performed by engineering firms and the audit report delivers information about how and where energy is being consumed. The program is designed to provide businesses with a roadmap on various actions they can take to reduce their overall energy consumption and effectively reduce operating costs.

Implemented Strategies

The Comprehensive Audit Program for the Industrial Segment had an increase in program participation in 2021. The projects serviced in 2021 were larger Level 2 audits. Audits were performed for various business types including manufacturing facilities, water treatment plants, military facilities, and research and development facilities. The Level 2 audits resulted in the customer receiving a report that includes a complete inventory of their energy consuming equipment. SDG&E also performed Level 2 audits for customers that had previously completed a Level 1 audit. The Level 2 audit was performed based on specific measures from the Level 1 report, allowing for a comprehensive evaluation. In 2021, SDG&E completed approximately fifteen audits in this Sector.

Challenges/Changes for 2022

Historically, there have been more audit requests than available funding. To mitigate this issue, SDG&E ensured the program has a comprehensive mix of customer types to include both previous and new participants. In previous years, the program had four participating contractors performing the industrial audits, however in 2022 there will be two participating contractors performing audits for this sector.

2021 Program Accomplishments

In 2021, the quality of SDG&E's delivered audits increased with additional feedback provided through a corrective action plan for the engineering firms servicing SDG&E customers.

C. SDGE3231 SW-IND-Calculated Incentives-Calculated

Program Description

The Calculated Incentives program 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 include State and federally mandated codes, industry-accepted performance standards or other baseline energy performance standards.

Implemented Strategies

SDG&E continued to offer virtual training for customers and trade professionals to reinforce and improve the knowledge of program participants on the various details and requirements of the program. The virtual format allowed external parties to participate in the training anytime. SDG&E also hosted bi-monthly meetings to review the program's project queue and regularly followed-up with project sponsors and other stakeholders to ensure projects could be processed and paid in a timely manner.

In addition, SDG&E conducted a joint targeted marketing campaign with the CAP program that targeted all Industrial customers and promoted extensive energy audits. Customers could use audit findings to apply for financial incentives offered by the program to retrofit existing equipment or install new high-efficiency equipment. SDG&E also worked on an Industry Standard Practice (ISP) study in 2021 for Extrusion Machine DC Motor Drives to explore new opportunities or measures for customers. If the study determines that a measure can be offered, it will provide additional opportunities for SDG&E customers that may have otherwise been ineligible to participate.

Challenges/Changes for 2022

SDG&E will continue to actively market the program, emphasizing process and program improvements, and will engage with new and existing qualifying Industrial customers to encourage adoption until a new Third-Party program serving the Industrial Sector launches.

2021 Program Accomplishments

SDG&E continued to work closely with the CPUC's Custom Project Review (CPR) team to address questions and obtain guidance for existing projects. SDG&E successfully paid incentives and closed two pending projects in 2021. SDG&E enrolled one new customer in the program in 2021 and will continue to shepherd existing Industrial projects through the program.

D. SDGE3233 SW-IND-Deemed Incentives Program Description

The Statewide Industrial Deemed Incentives program provides rebates for installing new energy efficient equipment. Deemed retrofit measures have prescriptive energy savings and incentive dollars and are intended for projects that have well-defined energy and demand savings estimates.

Implemented Strategies

In the first half of 2021, the Industrial Rebates Program continued with two separate program components: (i) the Instant Lighting Rebates Program for lighting products, and (ii) the Energy Efficiency Business Rebates Program for non-lighting products. The Instant Lighting Rebates Program utilizes a midstream delivery channel and 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. SDG&E closed the Instant Lighting Rebate Program on June 30, 2021 due to the launch of the new Statewide Lighting Program. All other non-lighting products continued to be offered in the Energy Efficiency Business Rebates Program, which utilized a downstream channel where customers purchase the product and apply for a rebate.

Monthly training for trade professionals also continued in 2021 and moved to virtual self-paced trainings, allowing trainings to continue in 2021 during the COVID-19 pandemic. These trainings provided a high-level overview of the programs and gave trade professionals the opportunity to work directly with program advisors. The virtual self-paced trainings have been well received.

Challenges/Changes 2021

In 2021, the Instant Lighting Rebates program closed at the end of the second quarter 2021 due to the launch of the Statewide Lighting program. The Statewide Industrial Deemed Incentives program saw a significant reduction in non-lighting measures participation partially due to the COVID-19 pandemic. The Statewide Third-Party HVAC and the Statewide Third-Party Food Service programs also launched in the third quarter of 2021 and the non-lighting portion of the Energy Efficiency Business Program tremendously experienced a decrease in customer participation.

2021 Program Accomplishments

The Energy Efficiency Business Rebates Program achieved higher savings than expected in 2021. Implemented projects were less in number (due to lighting being discontinued but, the projects yielded higher savings than in years past.

VI. AGRICULTURAL ENERGY EFFICIENCY PROGRAMS

A. SDGE3236 SW-AG-Customer Services – Audits Non-Res

Program Description

The Comprehensive Audit Program is an Integrated Demand-Side Management (IDSM) audit offered to agricultural customers. The program produces and provides customers with a comprehensive audit report equivalent to an American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Level 1 or 2 report. SDG&E offers two types of audits: (i)

ASHRAE Level 1 audit, which consists of a high-level walkthrough that provides an equipment inventory and high-level payback estimates of the identified energy efficient measures; and (ii) ASHRAE Level 2, which is a more detailed analysis of selected measures with investment-grade savings and financial calculations and deliverables. The Level 2 audit is geared toward businesses that plan to implement recommended measures within one year of the audit. As an IDSM program, audit scope and reports for both Level 1 and Level 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 with a roadmap on various actions they can take to reduce their overall energy consumption and effectively reduce operating costs.

Implemented Strategies

The Comprehensive Audit Program agricultural segment worked with the Energy Efficiency Business Incentives program to release a joint marketing campaign. Participation in the program continues to be low as SDG&E's agricultural segment is generally small and hard to reach. 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.

Challenges/Changes for 2022

SDG&E's Agricultural Sector makes up approximately 1.4% of the portfolio. The sector is mostly comprised of small farms dealing with several business challenges unique to the smaller agriculture customer, including coping with the State's continuing water shortage. In previous years, the program had three participating contractors performing the Agricultural audits. With the new Third-Party Agricultural program launching in the third quarter of 2022, the

Comprehensive Audit Program Agricultural sector will stop accepting audit applications on June 1, 2022, to give the contractor enough time to perform any outstanding audits and be able to invoice within the given time to shut down the sector.

2021 Program Accomplishments

The agricultural sector continues to be a challenge for SDG&E due to the limited customers in this segment. Historically, this program has had low participation and has continued to diminish over the years. In 2021, approximately five agricultural audits were completed.

B. SDGE3237 SW-AG-Calculated Incentives-Calculated

Program Description

The Calculated Incentives program 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 beyond baseline energy performance, which includes State and federally mandated codes, and industry-accepted performance standards or other baseline energy performance standards.

Implemented Strategies

SDG&E continued to offer training sessions for customers and trade professionals to reinforce and improve the knowledge of program participants on the various details and requirements of the program. The virtual format allowed external parties to participate in the training at a time convenient for them.

In addition, SDG&E conducted a joint targeted marketing campaign with the CAP, targeting all Agricultural customers and promoting extensive energy audits. Customers could use audit findings to apply for financial incentives offered by this program to retrofit existing equipment or install new high-efficiency equipment that saves energy.

Challenges/Changes for 2022

To increase program awareness, SDG&E will actively market the program, emphasizing process and program improvements, and will engage with new and existing qualifying Agricultural customers to encourage them to take advantage of the program's offerings until a new Third-Party program serving the Agricultural Sector launches.

2021 Program Accomplishments

SDG&E continued to work closely with the CPUC's CPR team to address questions and obtain guidance for existing projects. SDG&E successfully paid incentives and closed out all existing Agricultural projects in 2021. The program also received one new pre-application that SDG&E will continue to shepherd through the program.

C. SDGE3239 SW-AG-Deemed Incentives

Program Description

The Statewide Agricultural Deemed Incentives program 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 2021, the Agricultural Rebates Program continued with two separate program components: (i) the Instant Lighting Rebates Program, for lighting products, and (ii) the Energy Efficiency Business Rebates Program for non-lighting products.

The Instant Lighting Rebates Program utilizes a midstream delivery channel and 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. This year, SDG&E increased rebates for popular lighting measures to create more attractive options to encourage customers to participate.

All other non-lighting products continued to be offered in the Energy Efficiency Business Rebates Program, which utilized a downstream channel. In order to increase participation within the Energy Efficiency Business Rebates Program, SDG&E provided an incentive to trade professionals that installed certain measures such as industrial pipe insulation, process boilers, and large storage water heaters. The incentive to trade professionals was implemented to help spur project implementation for customers. Additionally, SDG&E increased rebates on non-lighting measures as a limited time offer. The limited time offer marketing strategy was implemented to create a sense of urgency to encourage customers to take full advantage of increased rebate amounts.

Monthly training for trade professionals also continued in 2021 and moved to a virtual self-pace training thus allowing trainings to continue in 2021 during the COVID-19 pandemic. These trainings provide a high-level overview of the programs and give trade professionals the opportunity to work directly with program advisors. The virtual self-paced trainings have been well received.

Challenges/Changes for 2022

The COVID-19 pandemic continued to be a challenge throughout 2021, resulting in a drastic reduction in participation in both lighting and non-lighting measures. In 2021, the Instant Lighting Rebate local program closed at the end of the second quarter due to the Statewide lighting program launching.

2021 Program Accomplishments

In the Energy Efficiency Business Rebates Program, SDG&E added the following measures: hand wrap machines, medium temperature vertical refrigeration cases, and a variety of heating, ventilation, and air conditioning measures such as fan controls, occupancy sensors, and

variable speed drives. The addition of these measures created more diverse offerings for SDG&E's customers.

VII. LOCAL INSTITUTIONAL PARTNERSHIPS

A. 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 energy and peak demand savings and establishes a permanent framework for sustainable, long-term comprehensive energy management programs at CDCR institutions served by California's four IOUs. The information and data for the following implemented strategies and program accomplishments were provided by the Partner in order to review the program's performance in 2021.

Implemented Strategies

In 2021 CDCR continued implementing retrofit projects and performing Investment Grade Audits. The IOUs and the Program Administration Manager (PAM) worked with the Department of Corrections to support development of new projects, ensuring that they reached maximum efficiency and incentive potential. To support more project development, the IOUs prioritized projects using energy audits done on a subset of CDCR's facilities, resulting in the next wave of projects. CDCR continued to use over half of the total energy consumed by State agencies under the Governor's executive authority. Though CDCR's budget for implementing energy efficiency projects is minimal, through the CDCR-IOU energy efficiency partnership, program efficiency projects can be identified and implemented using the IOU core and On Bill Financing Programs. On Bill Financing and Golden State Financial Market Place (GS $mart)

have been the primary source of funding. In select instances, On Bill Financing is supplemented by the State's Special Repairs Project funding.

Challenges/Changes for 2022

The COVID-19 pandemic resulted in several implementation challenges, including limited access to facilities, project slowdowns, and agency budget shortages. While these challenges will continue into 2022, the Partnership continues to look for creative ways to encourage and support participation. Scalable program changes will bridge the gap in 2022 until the rollout of the new Statewide Third-Party program administered by PG&E that same year.

2021 Program Accomplishments

The Partnership continued the effort to ensure new construction projects, natural gas-saving, and water conservation projects were clearly tracked and proactively managed. The Partnership also provided special training to the current Energy Service Company (ESCO) pool that included program rules, policies and procedures required to successfully implement a project through the Program. Executive Team meetings occur quarterly and involve senior leadership at the CA Department of Corrections, sustainability managers from sites across the State, and IOU management to identify new opportunities, manage project pipelines, and proactively address any challenges the program may have faced.

CDCR's ESCO pool rebid occurred in the second quarter of 2021. Anticipating and planning for ESCO pool rebids plays a critical role in maintaining project momentum and successful project completion. The Partnership hosted several trainings to onboard the new ESCO pool ensuring they are sufficiently acquainted with all program processes and procedures and setting them up to deliver successful and cost-effective projects.

The Partnership provided ongoing outreach and education to institutions, ESCOs and stakeholders and continues to improve program processes and procedures. CDCR has only one facility in SDG&E's service territory, the Richard J. Donovan Correctional Facility (RJD), and there were no energy savings projects at that facility in 2021. Based on the master schedule and prioritization of energy efficiency audits, additional RJD projects remain as opportunities in the queue for 2022.

B. SDGE3267 LInstP-California Community College Partnership

Program Description

The California Community Colleges (CCC) Partnership is a unique, Statewide program intended to achieve immediate and long-term energy savings and peak demand reduction within California's higher education system. The program was established in previous program cycles for sustainable, comprehensive energy management at campuses served by California's four IOUs.

The Partnership has a hierarchical management structure to ensure successful implementation that includes an Executive Team and Management Team comprised of senior leadership at the CCC Chancellor's office, sustainability managers from CCC districts, and IOU management on an ongoing basis.

The teams meet quarterly to discuss program management, overall program status and policy issues. The CCC Partnership also focuses heavily on outreach efforts in several areas, including: (i) 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; (ii) evaluation of new project technologies for suitability in the California Community College market; and (iii) planning and participation in CCC conferences and regional Campus Forums.

Implemented Strategies

The Partnership participated in virtual quarterly Campus Forums in both Northern and Southern California, serving as a venue for districts to share successes and strategies to address the shared challenges faced for facilities management and energy efficiency. The Partnership team presented at these Forums, providing time-sensitive updates on modern technologies, information on program implementation, and direct assistance to districts in attendance.

The Management Team participated in several virtual CCC conferences such as the Community College Facilities Coalition conference (CCFC) and the Association of College Business Officers (ACBO) conference to reach a diverse audience of facilities, business officers, administration, and board members. In addition, the team participated in Northern and Southern California regional virtual energy meetings organized by the Community Colleges (NorCal Summit and Southern California Facilities Officers), targeted towards campus facilities and energy managers. Finally, outreach team members conducted virtual campus meetings with Facilities and Operations and Maintenance staff to review project opportunities and manage project development efforts both on site at college campuses and while participating in the virtual ACBO Facilities Task Force quarterly meetings.

In addition to the virtual quarterly Management Team meetings to discuss overall program status, initiatives and policy issues, the team actively provided updates specific and respective to their own IOU territory comparing actual savings to goals. These reports were reviewed by both Management Team members and IOU management on an ongoing basis.

Challenges/Changes for 2022

The COVID-19 pandemic created challenges in 2021 for all parties involved in the Partnership. The Partners adapted to virtual operations and project delays while in-person

operations were suspended. In addition, Proposition 39 funding ended, which created a significant slowdown Statewide for the identification of new energy efficiency projects. In 2021, all efforts for CCC districts were focused on the complete utilization of any available funding. However, significant funding increases for energy projects are expected in 2022-23 due to increases in the Scheduled Maintenance and Special Repairs Program (SMSR). The Governor approved $511 million in his budget for 2021 for SMSR and has added a proposed additional $387.6 million to the 2022-23 budget. The CCC Chancellor's Office is advocating for energy efficiency and sustainability projects using SMSR funding to repair or replace existing HVAC equipment.

2021 Program Accomplishments

The Partnership provided extensive outreach and technical support through virtual formats (Zoom, Go To Meetings, and Microsoft Teams) to the districts within the CCC system in support of their efforts to identify, develop, and implement projects funded through the SMSR Program. The IOUs worked closely with the Chancellor's Office to develop resources and infrastructure for IOU Programs that could be leveraged with CCC Programs to create a mechanism to support California Community College Energy Efficiency Projects Statewide. Typical project types proposed were replacement of inefficient lighting with LED lighting, HVAC, controls, and Retro-commissioning (RCx).

In addition, the Partnership identified and prioritized the needs of the CCC districts, which were organized in a matrix by Program, Communication, and Management focused. The needs were met or addressed through providing Outreach Management support to districts as requested. Accomplishments toward meeting these needs primarily included the addition of IOU resources and offerings to the Partnership website for CCC districts to access. The website

features energy savings incentive and rebate programs such as Direct Install and other turnkey programs, Electric Vehicle charging and other clean transportation incentives, Building Operator Certification and other workforce education and training classes. The website also hosted presentation slides and recordings of past meetings and workshops, funding opportunities provided by the CEC, and the SEI Climate Corps Fellowship program for districts to access and utilize. The Partnership's first quarterly e-newsletter was published and distributed in October of 2021. The PDF format highlighted links to these web resources, upcoming events, and 2020 award recipients. The newsletter also encouraged districts to utilize the Partnership's assistance with developing a queue of sustainability projects as well as with setting up benchmarking and reporting for their campuses' energy use intensity using the Energy Star Portfolio Manager tools.

C. SDGE3268 LInstP-UC/CSU/IOU Partnership

Program Description

The UC/CSU/Utility Energy Efficiency Partnership is a unique, Statewide program which includes California's four IOUs, Pacific Gas and Electric (PG&E), Southern California Edison (SCE), Southern California Gas Company (SCG), and SDG&E, in partnership with the University of California (UC) and the California State University (CSU). The program generates energy savings through the identification and implementation of energy efficiency projects. The Partnership consists of three main project types: retrofit, commissioning, and new construction. Since its establishment in 2004, the Partnership has provided approximately 69 MW demand reduction and delivered approximately 508 million kWh/yr and 27 million therms/yr in energy savings Statewide.

Implemented Strategies

The program has a hierarchical management structure to ensure successful implementation. The Management Team meets monthly to conduct business at the operational level and the Executive Team meets on an as needed basis to discuss overall program status and policy issues. In addition to representatives from each Utility, the University of California Office of the President and California State University Chancellor's Office each have members on both 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 (PAM) organizes and facilitates team activities, works with individual stakeholders, actively tracks project savings and schedule data in a web-based tracking tool and creates regular reports to show overall status of the program and forecasts relative to goals.

Challenges/Changes for 2022

The COVID-19 pandemic continued to create challenges in 2021 for all parties involved in the Partnership. Projects remained on hold as in-person operations continued to be suspended. The pandemic created additional strain on campus budgets preventing the development and implementation of new and ongoing projects. Additionally, utilities and campuses faced engineering challenges to address the pandemic as a non-routine event.

In 2021, the Los Angeles Department of Water and Power (LADWP) was unable to renew their contracting mechanism that enabled their participation in the UC/CSU Partnership. LADWP projects with executed agreements continued implementation, however, without a Partnership contract in place, campuses in LADWP territory were unable to apply for new projects through the Partnership.

Some campuses stopped pursuing certain projects due to incentive cuts resulting from non-utility supply hourly analysis. In addition, current CPUC policy requiring energy savings above code (Title 24) and industry standard practice baselines is not always aligned with determining project financial impact to support project financing or translating savings to carbon reductions to meet university carbon goals. Monitoring Based Commissioning (MBCx) offerings at the various IOUs were discontinued in 2016, limiting project opportunities for UC and CSU, leaving a significant gap for what was a practical and popular delivery method for campuses. Although new site normalized metered energy consumption (NMEC) projects were initiated in 2021, SDG&E does not expect to return to the historical volume of MBCx. Additionally, many custom measures were moved to deemed, decreasing the claimable energy savings and incentives received by universities. In 2019, the Partnership also experienced a significant budget cut, which resulted in the discontinuation of the Partnership Training and Education Program, which remains discontinued.

The Partnership closed out its final Saving by Design projects in the first quarter of 2021, as the program transitioned to a new Statewide Third-Party program. As a result of this transition, new construction projects are no longer eligible for incentives through the UC/CSU Partnership Program.

The Partnership focused widely on efforts surrounding NMEC in compliance with Assembly Bill 802. SCE and SCG developed new whole building High Opportunity Project or Program (HOPPs) projects at two California State Universities, in parallel to the Partnership. SDG&E also completed projects through their HOPPS RCx program at a local Medical Center. PG&E continued developing and implementing NMEC projects at several UC campuses, to include at least one UC who is investigating CalTRACK methodologies for NMEC.

In addition to NMEC projects, UC and CSU focused on addressing barriers to energy efficiency, developing new contracting mechanisms, looking into opportunities for financing projects via OBF, and continuing work on a CEC Grant to develop a Master Enabling Agreement for energy efficiency at UC and CSU campuses. SCE's Clean Energy Optimization Pilot (CEOP) began at several campuses in 2019 and continued through 2021, after a hiatus caused by the pandemic. CEOP and the Partnership are mutually exclusive, so Partnership activities at CEOP campuses were discontinued.

The Third-Party solicitation process for the Statewide Higher Education program progressed as planned during 2021. A request for proposals was released in May 2021 and contract negotiations began during the fourth quarter of 2021. The UC/CSU Partnership is estimated to transition to a Third-Party program during the third quarter of 2022.

2021 Program Accomplishments

- Administrative
  - As the transition to the new Third-Party programs has taken longer than anticipated, the Partnership team looked at ways the current Partnership could be reinvigorated and incorporate current priorities to enhance its value over its final years. The following five priority areas were identified as offering the most value to UC and CSU: (i) Carbon Reduction; (ii) Meter-Based Savings Methodologies; (iii) Financing; (iv) Resiliency; and (v) Human Resources. The team discussed potential opportunities, as well as monitoring progress of ongoing initiatives, in these priority areas.
  - UC and CSU were granted funding from the State to address deferred maintenance projects. The Partnership Teams worked to identify project opportunities with energy efficiency components that the Partnership could help prioritize and met with campuses to assist in further developing potential projects.
  - The PAM continued developing enhancements to the project tracking database and public-facing dashboard.

- Projects
    - Significant volume of energy efficiency projects delivered in 2021 and underway for future years.
    - Completed 72 Retrofit, MBCx and New Construction projects at 15 different UC and CSU campuses (inclusive of UC Med Centers).

Overall, the UC/CSU/Utility Partnership made progress towards the 2021 program cycle goals, totaling over 3,501 kW (~458% of goal), 24.6 million kWh (~373% of goal), approximately 956,000 therms (~256% of goal), and providing over $6.3 million in incentives (~298% of goal) across the State.

D. 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 energy and peak 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 with 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. The information and data for the following implemented strategies and program accomplishments were provided by DGS to review the program's performance in 2021.

Implemented Strategies

The IOUs continued to work with the State to prioritize agencies that may benefit from ESCO work, both for large and pooled small buildings. The Partnership has provided extensive outreach and technical support to Agencies including California Highway Patrol (CHP),

Department of Motor Vehicles (DMV), Department of Parks and Recreation (DPR), the Judicial Council of California (JCC), and the Department of Food and Agriculture (DFA).

In response to the Public Safety Power Shutoffs, the Partnership coordinated on building resiliency for sites in the most critical zones. Outreach to these agencies through the Sustainable Buildings Working Group (SBWG) meeting and through other avenues continued to yield significant energy savings and continues to create a robust queue of future projects.

Challenges/Changes for 2022

The COVID-19 pandemic resulted in several implementation challenges including limited access to facilities and project slowdowns. The Partnership continues to look for creative ways to encourage and support participation. With the statewide program being stood up to service this group, this program was closed at the end of 2021.

2021 Program Accomplishments

In 2021, the IOUs and DGS leveraged findings from a working group organized in 2019 to address Savings by Design (SBD) participation barriers for DGS buildings. Working group efforts led to the development of several process documents to help better understand the DGS procurement process. The Partnership continues to track an SBD project currently in progress to use as a test case for implementing solutions developed by the working group.

The IOUs continued attending 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, which addresses GHG emissions from State-owned buildings, among other things. The IOUs play a supporting role to ensure that agency needs regarding energy data for benchmarking are met. The IOUs continue to use the working group for agency outreach.

Through training and outreach activities, the State/IOU Partnership increased awareness and understanding of Statewide program offerings to additional State agencies. DGS completed projects in SDG&E's territory in 2021 that included a project at a DGS owned facility. Based on continued agency outreach, the State/IOU Partnership anticipates additional opportunities for DGS projects in 2021.

E. SDGE3270 LInstP-University of San Diego (USD) Partnership

Program Description

The USD Partnership program was designed to create a more sustainable campus through the adoption and implementation of a robust Climate Action Plan (CAP) anchored in energy efficiency to reduce Green House Gas (GHG) emissions. USD created 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 educated campus audiences in identifying and adopting energy saving practices not only on campus, but also in their careers, communities and homes.

Implemented Strategies

The Local Institutional Partnership (LIP) Agreement between the University of San Diego and SDG&E ended in Q4 of 2020. Through discussions with the partner prior to year end, it was determined that additional time would be granted to allow the partnership to close-out activities that would continue past December 31, 2020. Those activities included compiling and providing the final invoice and final reporting for 2020, CPUC Annual Report 2020 Results, and transmission of convenience copies of records covering the 5-year agreements. Final invoicing of those activities was submitted by March 31, 2021.

Challenges/Changes for 2022

The Local Institutional Partnership contract ended in 2021. SDG&E is soliciting new programs to serve the public sector under the Third-Party Implementer model for 2022.

2021 Program Accomplishments

The Partnership close-out activities were completed, and the program ended March 31, 2021.

VIII. LOCAL GOVERNMENT PARTNERSHIPS:

A. SDGE3272 LGP – City of Chula Vista Partnership

Program Description

The goal of the Chula Vista Local Government Partnership (LGP) was to improve community and municipal energy efficiency by integrating education and outreach across City departments. The program components included municipal facility efficiency improvements, strengthening building energy codes and inspections, energy engineering, community-based energy conservation education, facility evaluations and financing assistance. During the program life, the partnership served 265,000 residents and 13,000 businesses within the City of Chula Vista, while also supporting neighboring South Bay cities' energy efficiency efforts as part of the South Bay Energy Action Collaborative (SoBEAC).

Implemented Strategies

The LGP Agreement between the City of Chula Vista and SDG&E ended in Q4 of 2020. Through discussions with the partner prior to year end, it was determined that additional time would be granted to allow the partnership to close-out activities that would continue past December 31, 2020. Those activities included compiling and providing the final invoice, reporting for 2020, CPUC Annual Report of 2020 Results, and transmission of convenience

copies of records covering the 5-year agreements. Final invoicing of those activities was submitted by March 31, 2021.

Challenges/Changes for 2022

The LGP contract ended in 2021. SDG&E is soliciting new local government programs under the Third-Party Implementer model in 2022.

2021 Program Accomplishments

The Partnership close-out activities were completed, and the program ended March 31, 2021.

B. SDGE3273 LPG – City of San Diego Partnership

Program Description

The goal of the City of San Diego Energy Efficiency Partnership was to increase the City's role as an environmental steward, a leader in best EE practices and to support the City's Climate Action Plan (CAP). The program areas focused 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 was a non-resource program, savings resulted from the City's LGP activities and were captured in other programs offered by SDG&E.

Implemented Strategies

The LGP Agreement between the City of San Diego and SDG&E ended in Q4 of 2020. Through discussions with the partner prior to year end, it was determined that additional time would be granted to allow the partnership to close-out activities that would continue past December 31, 2020. Those activities included compiling and providing the final invoice, reporting for 2020, CPUC Annual Report 2020 Results, and transmission of convenience copies

of records covering the 5-year agreements. Final invoicing of those activities was submitted by March 31, 2021.

Challenges/Changes for 2022

The LGP contracts ended in 2021. SDG&E is soliciting new local government programs under the Third-Party Implementer model in 2022.

2021 Program Accomplishments

The Partnership close-out activities were completed, and the program ended March 31, 2021

C. SDGE3274 LGP – County of San Diego Partnership

Program Description

The County of San Diego LGP delivered net energy savings, peak demand savings and sustained energy efficiency through the implementation of both internal and external education and outreach programs, community-based implementation programs and projects at County facilities. The Partnership assisted the County of San Diego with 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 and Education.

Implemented Strategies

The LGP Agreement between the County of San Diego and SDG&E ended in Q4 of 2020.

Challenges/Changes for 2022

The LGP Agreement between the County of San Diego and SDG&E ended in Q4 of 2020. In 2022, SDG&E will solicit new local government programs under the Third-Party Implementer model.

2021 Program Accomplishments

The LGP Agreement between the County of San Diego and SDG&E ended in Q4 of 2020. Through discussions with the partner prior to year end, it was determined that additional time would be granted to allow the partnership to close-out activities that would continue past December 31, 2020. Those activities included compiling and providing the final invoice, reporting for 2020, CPUC Annual Report 2020 Results, and transmission of convenience copies of records covering the 5-year agreements. Final invoicing of those activities was submitted by March 31, 2021.

D. SDGE3275 LGP – Port of San Diego Partnership

Program Description

The goal of the Port of San Diego's (Port) and SDG&E's Energy Efficiency Partnership (Partnership) was to increase the Port's role in the region as an environmental champion and progress achievement of the Port's Climate Action Plan (CAP) greenhouse gas (GHG) reduction goals. These goals were accomplished by working to maximize energy efficiency on Port tidelands and providing Port tenants, staff, and the public the necessary tools to make decisions that continued to promote energy efficiency. Work done through the Partnership was concentrated within the Port's five-member cities: San Diego, Coronado, National City, Chula Vista, and Imperial Beach.

Implemented Strategies

The LGP Agreement between the Port of San Diego and SDG&E ended in Q4 of 2020. Through discussions with the partner prior to year end, it was determined that additional time would be granted to allow the partnership to close-out activities that would continue past December 31, 2020. Those activities would include compiling and providing the final invoice, reporting for 2020, CPUC Annual Report 2020 Results, and transmission of convenience copies

of records covering the 5-year agreements. Final invoicing of those activities was submitted by March 31, 2021.

Challenges/Changes for 2022

The LGP contracts ended in 2021. SDG&E is soliciting new local government programs under the Third-Party Implementer model in 2022.

2021 Program Accomplishments

The Partnership close-out activities were completed and the program ended March 31, 2021.

E. SDGE3276 LPG – SANDAG Partnership

Program Description

The San Diego Association of Governments (SANDAG) Partnership served as the regional planning agency for the 18 cities and County governments of the San Diego Region. The SANDAG LGP functioned to deliver energy efficiency services, climate action planning services, and related assistance to the 16 member cities that did not have direct LGP agreements with SDG&E. The Program also allowed SANDAG to integrate energy efficiency and greenhouse gas (GHG) reduction practices into its internal operations as part of the projects it developed for the San Diego region.

Implemented Strategies

The LGP Agreement between SANDAG and SDG&E ended in Q4 of 2020. Through discussions with the partner prior to year end, it was determined that additional time would be granted to allow the partnership to close-out activities that would continue past December 31, 2020. Those activities would include compiling and providing the final invoice, reporting for 2020, CPUC Annual Report 2020 Results, and transmission of convenience copies of records

covering the 5-year agreements. Final invoicing of those activities was submitted by March 31, 2021.

Challenges/Changes for 2022

The LGP contracts ended in 2021. SDG&E is soliciting new local government programs under the Third-Party implementer model in 2022.

2021 Program Accomplishments

The Partnership close-out activities were completed and the program ended March 31, 2021.

F. SDGE3278 LPG – Emerging Cities Partnership

Program Description

The Emerging Cities Program (ECP) was part of the LGP umbrella and was intended to provide local governments additional resources to support and build capacity in engaging in energy efficiency activities that achieved deep, comprehensive energy savings. The ECP collaborated with SANDAG's Energy Roadmap Program to provide energy assistance to public entities with energy and sustainability projects and community outreach.

Additionally, the ECP funded activities supporting municipal codes and standards, education and outreach, implementation of Climate Action Plans (CAP) and Energy Action Plans (EAP), greenhouse (GHG) reduction plans and other sustainable projects.

Implemented Strategies

The LGP Agreement between The Emerging Program and SDG&E ended in Q4 of 2020. Through discussions with the partners prior to year end, it was determined that additional time would be granted to allow the partnership to close-out activities that would continue past March 31, 2020. Those activities would include compiling and providing the final invoice, reporting for 2020, CPUC Annual Report 2020 Results and transmission of convenience copies of records

covering the 5-year agreements. Final invoicing of those activities was submitted by March 31, 2021.

Challenges/Changes for 2022

The LGP contracts ended in 2021. SDG&E is soliciting new local government programs under the third-party implementer model in 2022.

2021 Program Accomplishments

The Partnership close-out activities were completed and the program ended March 31, 2021.

IX. LOCAL EMERGING TECHNOLOGIES PROGRAMS

The Statewide Emerging Technologies Program (ETP) supports the IOUs' energy efficiency (EE) programs in their achievement of aggressive objectives through three subprograms:

- The Technology Introduction subprogram supports efforts to introduce technologies to the market by exposing end users to applications of emerging technologies in real-world settings, and by using third-party projects to deploy technologies, on a limited scale, in the market.
- The Technology Assessment subprogram identifies and assesses the performance of emerging EE technologies and solutions that may be offered to customers with an incentive.
- The Technology Development Support subprogram promotes efforts to increase technology supply by educating technology developers about technical and programmatic requirements for rebated (incentivized) measures.

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

A. SDGE3246 SW-ET – Technology Introduction Support

Program Description

The Technology Introduction Support (TIS) subprogram supports the introduction of new technologies to the market, on a limited scale, through several activities including Scaled Field Placement (SFP) projects, Demonstration and Showcase (D&S) projects, and market and behavioral studies.

SFP projects place measures at several customer sites as a key step toward gaining market traction and feedback. Typically, these measures have already undergone an assessment or similar evaluation to reduce risk of failure. Monitoring activities on each scaled field placement are determined as appropriate.

D&S projects are designed to provide key stakeholders the opportunity to "kick the tires" on proven combinations of measures that advance Zero Net Energy (ZNE) goals. D&S projects introduce measures at a systems level to stakeholders, whether the general public or a targeted audience, in real-world settings, thus creating broad public and technical community exposure and increased market knowledge.

Market and behavioral studies are designed to perform targeted research on customer behavior, customer decision-making, and market behavior to gain a qualitative and quantitative understanding of customer perceptions, customer acceptance of new measures, and market readiness and potential for new measures.

Implemented Strategies

SDG&E's ETP implemented several strategies in pursuit of its goals for the 2021 TIS subprogram. The ETP scanned and screened for nascent and emerging technologies from a wide variety of sources – CEC EPIC (Electric Program Investment Charge) Program, Emerging Technologies Coordinating Council (ETCC) Basecamp, industry groups, Electric Power

Research Institute (EPRI), E Source, CEE (Consortium for Energy Efficiency), GTI (Gas Technology Institute) – while coordinating closely with other SW-ET members and internal EE Program advisors and engineering support staff to prioritize measures and technologies suitable for TIS projects.

SDG&E conducted TIS projects in support of measure development by implementing SFP and D&S projects in actual field conditions, while also performing primary or secondary market research, as necessary, to gain market insights on technologies.

The ETP scanned, screened, and prioritized TIS project ideas in coordination with the energy efficiency programs as well as Statewide ETCC partners. The results of these activities included primary and secondary market research to gain further insight into new technologies and their potential in SDG&E's service territory.

However, due to ETP's impending transition to the third-party implementation model in 2021 (ETP-EE-Gas) and 2022 (ETP-EE-Electric), the TIS Program focus for 2021 was to complete all previously committed projects.

Throughout 2021, the SDG&E ETP participated in key industry advisory committees (ETCC, CEE, EPRI, E Source), virtual summits and conferences, open forums, and webinars to share research results with stakeholders and interested public audiences. Completed project reports were published on the ETCC website.

Challenges/Changes for 2022

The new Statewide ETP-Gas program administered by SCG was launched in November 2021. The new Statewide ETP-Electric Third-Party program administered by SCE will begin implementation in May, 2022. As part of the transition to these new Statewide programs, SDG&E does not plan to initiate new ET projects. SDG&E will instead focus on completing the

five remaining active projects initiated in previous years and funded with the budget approved through 2022.

2021 Program Accomplishments

Under the TIS subprogram, SDG&E completed one of the four projects it had in flight in 2021. The TIS project completed in 2021 was an evaluation of a residential IDSM behavioral technology.

The three remaining projects under the TIS subprogram include: (i) a study of a City of San Diego public library zero-net energy (ZNE) project, (ii) an alternative refrigerants project focusing on low-greenhouse warming potential (low-GWP) refrigerants and (iii) a residential HVAC quality installation and quality maintenance project evaluating the behavioral response to alerts from a residential HVAC fault detection and diagnostics (FDD) device. All three projects are expected to be completed in 2022.

B. SDGE3247 SW-ET – Technology Assessment Support

Program Description

Through its Technology Assessment (TA) element, a historical core function providing critical support to EE programs, the ETP evaluates the performance claims of EE measures that are new to the market, or underutilized for a given application, for 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. Data from different sources may be used to support assessment findings, including *in situ* testing (conducted at customer or other field sites), laboratory testing, or paper studies. In addition to other findings, assessments typically generate some of the data that EE incentive programs can use to construct a Work Paper for each measure, estimating energy and demand savings over the life of the measure.

Implemented Strategies

In 2021, SDG&E implemented several strategies to accomplish the goals of the TA subprogram. Through the California Energy Commission's Electric Program Investment Charge (CEC EPIC) program and in partnership with a low-income building owner, SDG&E continued its low-income, multifamily residential whole-building demonstration project with Electric Power Research Institute (EPRI). This project is in support of advancing State goals and understanding of the implications of decarbonization on low-income MF buildings, owners and tenants (i.e., overall retrofit project costs, grid interactions, existing infrastructures, tenant needs, etc.).

In collaboration with IOU and non-IOU partners, SDG&E scanned a wide variety of sources for assessment candidates. These sources include the ETCC website idea submission portal, ideas presented to SDG&E by past and current consultants, product vendors and manufacturers, and from past pilot studies. SDG&E identified, screened, and prioritized these technologies or strategies for inclusion to the program's TA studies. For the five TA projects that were completed in 2021, SDG&E's ETP produced reports describing TA results, conclusions, and recommendations and engaged various EE program stakeholders to conduct the technology transfer of the studies' findings. For example, the results from the gas steam table project were transferred to EE program stakeholders and recommended for technology adoption as a deemed rebate measure.

Additionally, in partnership with its IOU and non-IOU counterparts, SDG&E's ETP coordinated intake ideas and assessments, and shared technology information through the virtual ET Summit 2021 and coordinated webinars with the ETCC on various topics for residential, commercial, industrial, and agricultural sectors.

Due to ETP's impending transition to the third-party implementation model in early 2022, the primary focus for the 2021 TA Program was to complete all committed projects. Despite the ETP continuing to scan, screen, and prioritize TA candidate projects and technologies in coordination with the energy efficiency programs as well as Statewide ETCC partners, no new projects under the TA subprogram were initiated in 2021.

Challenges/Changes for 2022

The new Statewide ETP-Gas program administered by SCG was launched in November 2021. The new Statewide ETP-Electric third-party program administered by SCE is expected to begin implementation in early 2022. As part of the transition to these new Statewide programs, SDG&E does not plan to initiate new ET projects in 2022. SDG&E will instead focus on completing the six remaining active projects initiated in previous years and funded with a budget approved through 2022. The six remaining projects under the TAS subprogram include: (i) a study on a San Diego Unified School District public elementary school zero-net energy (ZNE) project; (ii) a study on a compressor-less residential air conditioning technology; (iii) a plug load control system technology lab study; (iv) a CEC EPIC project on the development and field testing of advanced heat pumps; (v) a CEC EPIC project on multi-family heat pump water heating; and (vi) a project investigating pathways to decarbonization in the low-income multi-family residential market. The first three projects listed are expected to be completed in the first quarter of 2022, while the three latter projects are expected to reach their completion by the end of 2023.

2021 Program Accomplishments

SDG&E's TA Program completed four previously initiated projects: (i) EPRI Micro Brewery Energy Savings Opportunities; (ii) High Efficiency Steam Tables (co-funded with

SoCalGas); (iii) EPRI Data Center Collaborative; and (iv) a food simulating sensor medium for use in walk-in refrigeration applications. The High Efficiency Steam Tables study was recommended for transfer to a rebate program. Completed project reports were published to the ETCC website for public sharing and reference.

SDG&E collaborated with IOU and non-IOU partners in scanning a wide variety of sources for assessment candidates, coordinating with ETCC members on intake ideas and assessments, and shared technology information through the 2021 ET Summit. SDG&E coordinated and collaborated with ETCC and CEC on multiple webinars, focusing on various topics for the residential, commercial, industrial, and agricultural sectors.

C. SDGE3248 SW-ET – Technology Development Support

Program Description

The Technology Development Support (TDS) subprogram provides assistance to private industry in developing or improving technologies. Although product development – the process of taking an early-stage technology or concept and transforming it into a saleable or marketable product – is the domain of private industry, there are opportunities where IOUs are well-qualified, or in a strong position, to undertake targeted, cost-effective activities supporting private industry product development efforts. This support decreases innovators' uncertainties and allows SDG&E opportunities to influence the new technologies as they are developed.

Implemented Strategies

In 2021, SDG&E implemented several strategies to accomplish the goals of the TDS subprogram. SDG&E's ETP collaborated directly with industry actors and partners as well as innovators from universities and other research institutions, such as the Western Cooling Efficiency Center (WCEC), the California Lighting Technology Center (CLTC), the California Plug-Load Center (CalPlug), and the Electric Power Research Institute (EPRI) to provide

targeted education, connection, technical and advisory support, and guidance for technology development.

SDG&E continued to support early-stage companies through its SW ETP membership in the California Institute of Technology (Caltech)-managed Rocket Fund program. The program provides entrepreneurial education and competitive funding to help accelerate university originated technologies from lab to product prototype ready for customer field testing. In collaboration with the ETCC and the other ET market actors, the program also continued ongoing business relationships with investors interested in funding cost-effective EE technologies.

SDG&E also continued ongoing business relationships with investors interested in funding cost-effective EE technologies. Due to ETP's impending transition to the Third-Party Implementation model in 2022, the primary focus for the TDS Program in 2021 was to continue to implement and complete all outstanding committed projects. While the ETP continued its mandate to scan, screen, and prioritize candidate projects and technologies, SDG&E did not initiate any new projects under the TDS Program in 2021.

Challenges/Changes for 2022

The new Statewide ETP-Gas program administered by SCG was launched in November 2021. The new Statewide ETP-Electric Third-Party program administered by SCE is expected to begin implementation in early 2022. As part of the transition to new Statewide programs, SDG&E does not plan to initiate new ET projects. SDG&E will instead focus on completing the last remaining active project initiated in previous years and funded with a budget approved through 2022.

2021 Program Accomplishments

SDG&E continued to collaborate with innovators from universities and other research institutions to maintain ongoing business relationships with investors interested in funding cost-effective EE technologies. The Statewide ET team coordinated on four webinars with the CEC's EPIC and building technologies team.

SDG&E is finalizing its last active TDS project, an LED Container Growing Evaluation at the Salk Institute.

ETP Activities

In addition to its program activities, SDG&E's ETP engaged in several additional activities in 2021.

In collaboration with ETCC leadership and partners, the Statewide ETP program successfully conducted another virtual ET Summit in 2021, which attracted 320 registrants and 195 unique attendees over the course of two days in mid-November.

In addition to the ET Summit, SDG&E's ETP coordinated with its SW ETP and ETCC partners, with CEC participation and leadership, to successfully conduct four webinars in 2021, attracting between 82 and 120 attendees per event. The wide-ranging topics included session titles like: How Smart Can Homes Get?, HVAC & Water Heating Solutions, Low-Carbon Food Processing and New Refrigerants.

The SW ETP coordinated with the CEC EPIC Building Technologies team on the technology transfer process, developing a technology transfer form that embodies custom measure data requirements to help assist EPIC program contractors and staff communicate the measure development process with IOUs.

Taking into account and including broad stakeholder input, the SW ETP completed the electric Technology Priority Maps (TPMs) Statewide updates and posted the document at https://ca-etp.com/tpm.

The SW ETP continued to enhance and update the ETCC website to facilitate project activity searches. Finally, working with the SW ETP team, SDG&E collaborated and contributed comments on the two-stage (RFA and RFP) ETP-Electric solicitation.

Challenges/Changes for 2022

The Statewide ET-Gas Program led by SCG was launched in November 2021. The Statewide ET-Electric program led by SCE is scheduled to begin its transition to the Statewide third-party implementation model in early 2022. Once the SW structure takes full effect, ET projects will be selected and implemented as Technology Focused Pilots (TFPs) on a SW scale, guided by the Technology Priority Maps (TPMs).

X. FINANCE PROGRAM

A. 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 and demand response measures for non-residential customers, including multifamily property owners or management companies, who might not otherwise install EE measures, primarily due to capital constraints. Approved customers who install qualified equipment are eligible to receive a full rebate or incentive by participating in SDG&E programs and financing for the project cost balance. Customer loans are repaid through a fixed monthly installment repaid through the customer's utility bill.

Implemented Strategies

OBF coordinates with assigned account executives, partnership programs and third-party programs to support financing of approved measures and projects. Staff works closely with assigned customer accounts by providing outreach and participating in seminars, tradeshows, periodic meetings and special projects. Financing programs also enable SDG&E to provide alternative options for customers who may have financial constraints to install energy efficiency projects. The OBF trainings offer a two-way open communication channel between trade professionals and SDG&E's OBF Program staff.

Since its inception in 2006, SDG&E's OBF program has funded about 1,640 loans totaling approximately $69 million as of year-end 2021. Although SDG&E has seen a reduction in projects generally, SDG&E anticipates that there will be an uptake in participation due to the launch of the new Third-Party programs. SDG&E continues to implement a customer cap to ensure that funding remains available for more customers.

Challenges/Changes for 2022

Project Payback and Eligibility requirements for business projects to qualify continue to be a challenge for some customers. The payback tends to be much longer than the 15-year maximum required for business projects to qualify. SDG&E will continue to review protocol to ensure that the correct policies are in place while allowing the maximum number of qualified customers to participate.

2021 Program Accomplishments

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 2021

default rate for OBF was 0.46%. Projects that were facilitated by an OBF loan enabled savings of approximately 1,331,279 kWh, 55.7 kW and 2,558 therms.

XI. CODES AND STANDARDS PROGRAMS

A. SDGE3251 SW-C&S – Compliance Enhancement

Program Description

The Compliance Enhancement (CE) subprogram supports increased compliance with the adopted Building Energy Efficiency Codes and the Appliance Standards. Compliance enhancement and improvement activities complement advocacy work by maximizing verified, persistent savings from C&S activities. The CE subprogram targets market actors throughout the entire compliance chain, providing education, outreach, technical support, and resources to improve compliance with both building and appliance energy standards.

Implemented Strategies

Throughout 2021, the CE subprogram continued to employ a systematic approach to enacting behavior change throughout the building and appliance efficiency supply chains. Using a three-pronged performance improvement approach, SDG&E's CE subprogram team addressed the essential elements of behavior change, including:

- Training to increase awareness and motivation and to provide the skills needed;
- Outreach to increase awareness and motivation; and
- Tools and resources to empower people to take the desired action.

The work accomplished in each area reflects specifically what key market actors told the CE subprogram they want and need in order to improve compliance on building and appliance standards. These tools were designed and completed in close collaboration with, and approval by, the CEC staff.

Challenges/Changes for 2022

The current SDG&E CE subprogram has been successful in reaching a broad audience of builders, developers, engineers, contractors, building inspectors, plans examiners, building officials, architects, program managers, Certified Energy Analysts (CEA), and multiple additional market actors involved in the construction of homes and buildings. As the future of construction and retrofits evolves to meet California's climate, decarbonization and Zero Net Energy (ZNE) goals, there will be an opportunity for additional stakeholders to be educated in a changing construction landscape. The SDG&E CE subprogram will be ready to adapt to the changing demands as the California Building and Appliance Standards become more stringent between now and when California must meet key milestones in 2030 related to Senate Bill (SB) 350 (CEC's Doubling Energy Efficiency Savings) and ZNE[4] for multifamily, mixed-use buildings, and commercial new construction and retrofits goals.

2021 Program Accomplishments

In response to the COVID-19 pandemic, the jointly funded and administered EnergyCodeAce™ (website for code enforcement-related resources) has maintained some of the trainings on the virtual platform and in hybrid (virtual/in person) learning environments upon request from several stakeholder groups in the SDG&E service area. In coordination with the other California IOUs, SDG&E facilitated delivery of 145 virtual classes to 3,050 students with 439 students attending from SDG&E's service area. Statewide, EnergyCodeAce achieved a 27% knowledge swing and 97% satisfaction rate after being evaluated. Additionally, EnergyCodeAce gained more than 5,000 views on the program's YouTube channel featuring topics such as

[4] CPUC, CA Energy Efficiency Strategic Plan (January 2011 Updated) at Section 1 – Page 6, "Big Bold Energy Efficiency Strategies" *see* State Goal 2, "All new commercial construction in California will be zero net energy by 2030", available at https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/c/5303-caenergyefficiencystrategicplan-jan2011.pdf.

building modeling demonstrations, permit technician checklists, annotated compliance forms, and pool pump efficiency trainings for installers. The number of EnergyCodeAce subscribers climbed to over 15,000 and the number of website visits increased by 27% over 2020.

Due to changes to in-person conferences and trade shows caused by COVID-19, EnergyCodeAce teams increased emphasis on providing targeted online outreach and was able to attend several industry conferences. Further, using trainings, tools, and other resources targeted specifically to organizational needs, SDG&E's Compliance Enhancement subprogram team strengthened strategic partnerships with key industry organizations and stakeholders, including: the American Institute of Architects California, California Building Officials, California Association of Building Energy Consultants, Building Industry Association of San Diego, San Diego chapter of the Association of Space Heating, Air Conditioning and Refrigeration Society, San Diego chapter of the American Society of Plumbing Engineers, US Green Building Council San Diego, San Diego Regional Climate Collaborative, and local jurisdiction staff (building officials, plans examiners, building inspectors, and permit technicians) in order to provide their members and stakeholders. In order to draw more people into classes, EnergyCodeAce launched a new series of 30–90-minute live webinars called "Code Breakers" designed to bring critical Energy Code information to industry organization chapters. The initial "Code Breakers" topics were selected to help support decarbonization and encourage the move toward all-electric buildings, including photovoltaics and battery storage, nonresidential mechanical systems, single family all electric, multifamily all electric, nonresidential all electric, and accessory dwelling units.

At the local level, the CE program has increased its local outreach to market to stakeholders by developing strategies to directly contact specific contractors, retailers,

distributors, manufacturers, engineers, building departments, trade associations, and others to increase their access to trainings, tools, and resources. The team made 485 phone calls and sent emails to 437 individual market actors in the San Diego region. Also, at a local level in coordination with the SDGE3252 – Reach Codes and SDGE3253 Planning & Coordination subprograms, the CE subprogram developed new strategies to educate multiple market actors on compliance strategies and activities for Title 24, Title 20, reach codes, building decarbonization, and ZNE beginning in 2021.

The CE team conducted a needs assessment to gain input from a broad swath of CE market actors regarding all EnergyCodeAce offerings in 2021. From the feedback from the needs assessment, the IOU CE team continued strengthening the EnergyCodeAce brand and website by moving to a new look and feel that embodies a sense of hope, ease, and trust, all while encouraging code practitioners to "Comply with Me." The CEC team responded to users' requests for a more powerful, accurate search function, redesigned the EnergyCodeAce.com navigation bar and developed new page templates that proved to increase wayfinding during user testing. Half of the more than 65,000 visits to the Tools Ace pages in 2021 went to the Virtual Compliance Assistant (VCA), where compliance forms can be completed, verified for compliance, and downloaded for inclusion in construction documents. The IOU CE team worked with the CEC and focus groups to expand the functionality of the VCA. Going forward, installers will be able to import the information from a nonresidential project's certificate of compliance to the project's nonresidential certificate of installation form and use the VCA to verify when substitutions that may be made in the field do or do not comply with the as-permitted project. The Reference Ace also proved to be a valuable resource for people who want to quickly access official Title 24, Part 6 and Title 20 language and supporting documents.

The CE subprogram continued providing a library of useful resources including checklists for plans examiners and building inspectors, detailed application guides for various project types, and fact and trigger sheets. A recent analysis of website downloads shows sharp increases in the number of EnergyCodeAce Resource downloads between March and September of 2021 when the announcement of the new 2022 Title 24 codes and standards were approved by the CEC's Commissioners. Compliance improvement subject matter experts (SME):

- Continued supporting CASE (Codes and Standards Enhancement) report authors and the Title 24, Part 6 advocacy team with 2022 CASE work by providing implementers' point of view.
- Reviewed 27 CASE reports for clarity and enforceability.
- Worked with the CASE authors and the CEC to develop new 2022 Title 24, Part 6 Multifamily Chapter of the CEC's Compliance Manuals by providing project examples.

B. 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 local energy ordinances (reach codes) that exceed Statewide Title 24 minimum EE requirements for new buildings, additions, or alterations. Reach Code (RC) program support for local governments includes research and analysis to establish performance levels and cost effectiveness relative to Title 24 by climate zone, drafting model ordinance templates to encourage regional consistency, assistance for completing and expediting the application process required for approval by the CEC, and supporting implementation once effective.

Implemented Strategies

Many local jurisdictions have established goals within their Climate Action Plans (CAPs) 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 state and federal levels, cities and counties are experiencing an increased sense of urgency for local action to meet the statewide goals. This has translated to a greater interest in reach codes as a path to achieve goals. As reducing GHG emissions is the highest priority, there is a shift in focus from solely reducing energy use to targeting energy use reductions associated with carbon emissions. This shift has resulted in an increased level of interest in all-electric designs both at the State and local level.

The 2019 Energy Code includes an all-electric baseline for low rise residential new construction, allowing all-electric designs to comply with and exceed the Energy Code. Changes to the State code created a path for local jurisdictions to accelerate emissions reductions in new construction using one or a combination of the following options applied by building use type:

- Electric Preferred: requires mixed fuel designs to exceed the code and all-electric designs to comply with code.
- Electric-ready: requires mixed fuel designs to install conduit and or/wiring to enable future conversion to electric equipment; or
- All-electric: restricts new construction to all-electric designs only.

Some SDG&E local jurisdictions have approved all electric reach codes and measure-based reach codes, such as energy efficiency retrofits, commercial benchmarking, solar hot water heating, heat pump water heating, or requiring PV systems on nonresidential projects. In addition, many jurisdictions adopted reach codes accelerating the requirements for installing electric vehicle infrastructure and electric vehicle service equipment (EVSE) in new buildings.

For technical support of local jurisdictions, the RC subprogram presented cost-effectiveness studies, consulted on options and opportunities, created a checklist for permit applicants, and reviewed and made recommendations on proposed ordinance structure, triggers

and language. For implementation solutions, SDG&E has created specific trainings, tools and resources for multiple jurisdictions.

Challenges/Changes for 2022

In 2021, the SDG&E RC subprogram continued to evolve as the demand for reach codes increased across California driven by jurisdictions looking to reach Climate Action Plan goals through progressive reach codes, and as California looks to meet the 2030 SB 350 (doubling of Energy Efficiency goal) and 2030 ZNE (Zero Net Energy) goals for commercial new construction through innovative ways. Reach codes will be a common path to meet these demands, and the SDG&E RC subprogram will need to innovate to assist jurisdictions and market actors to adapt to this changing reach code and climate action planning landscape. In 2022, the RC subprogram will scale up efforts to deliver more trainings, tools and resources to a growing number of jurisdictions looking to pursue reach codes beyond 2021.

2021 Program Accomplishments

When the 2019 Energy Code became effective on January 1, 2021, multiple jurisdictions showed interest in pursuing reach codes. Throughout 2021, work to support the jurisdictions pursuing reach codes included analysis and report development, technical support, reach code resource accessibility improvements, and other activities. RC program activities fall into two main categories: 1) Direct technical support – including cost-effectiveness studies, model language, and implementation resources, and the Cost-effectiveness Explorer Tool, and 2) Resources, Communications and Events – including News Briefs, Frontrunners, conferences, and webinars.

Direct Technical Support

Cost-effectiveness Studies: The IOUs shared resources to complete six new cost-effectiveness studies in 2021: High-rise Multifamily New Construction, Detached ADUs, Single Family Residential Retrofits and Electrification, Large Offices, and Battery Storage in Single Family Homes. The program began work on three studies including: Restaurants (including Commercial Kitchen Equipment), Multifamily Retrofits and Electrification, and Nonresidential Retrofits and Electrification, all expected to be released in Q1 2022.

Many jurisdictions relied upon the IOU cost-effectiveness studies during the reach code adoption process. Even when an ordinance is not structured to amend the Energy Code and there is no legal requirement to document cost-effectiveness, the studies provide critical information regarding costs, energy savings and emissions reductions that enable jurisdictions and communities to make informed policy decisions. Approved local ordinances may be found on the LocalEnergyCodes.com and Energy Commission websites.[5.]

Supporting Documents: In addition to developing new cost-effectiveness reports, the RC program, independently and in collaboration with other organizations, supported reach code adoption by creating supplemental support documents. Beginning from a common core helps to support consistent code language across jurisdictions with similar objectives. Supporting documents completed in 2021 included: Model Ordinance Language, Compliance Checklists, Reach Codes training, Reach Code Fact Sheets, Reach Code Letters to participants, CEC Cover Letters, Reach Code Options and a Reach Codes User Guide.

[5] CEC, Local Ordinance Exceeding the 2019 Energy Code available at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency-3.

Cost-effectiveness Explorer: The Cost Effectiveness Explorer simplifies the process for jurisdiction staff, allowing them to easily select and view only their jurisdiction-specific, relevant results for specific policy options of interest. The Reach Code Program continued developing and expanding the Cost Effectiveness Explorer included the following additions in 2021: 1) Existing housing data, 2) Customized results display, 3) User ability to modify assumptions and 4) Tracking tools to continually improve user experience. The new "Flexible Path" allows users to set target performance specifications based on the potential cost-effective savings.

Resources, Communications and Events

LocalEnergyCodes.com Website Update:

Local interest in reach codes has continued to accelerate throughout 2021, fueled by the desire to decarbonize the building sector. To support improved outreach efforts and remain a trusted resource in this growing area, the Reach Codes Program continues to update the RC program website. Throughout the year, interest in the site grew approximately 8%, from 397 to 429 subscribers.

The Local Ordinance Map on the website is an interactive map of CA that allows users to search geographically or by Reach Code Path. At the individual jurisdiction level, the map provides a summary of the ordinance scope and requirements, and users may download the ordinance and the staff report presented at the public adoption meeting.

In addition to maintaining stakeholder engagement through the website, the team continued publishing the "Reach Codes News Brief" monthly newsletter throughout the year. The News Brief offers insight into the rapidly evolving reach code landscape and highlights "Frontrunner" cities that are leading the way. The program published Five Frontrunner articles that described the RC efforts of cities around the State, which were featured on the website's

home page carousel of articles. The 2021 Frontrunner articles were downloaded 685 times.[6] The Reach Codes team continues to develop its social media presence and maintains a Twitter account with two to three weekly posts.

The RC Program presented and participated in several conferences and held two technical webinars in 2021 including two Bay Area Regional Network (BayREN) events, two California Association of Building Energy Consultants (CABEC) events, two California Water Energy Partnership (CalWEP) events, and the 2021 California Climate and Energy Collaborative (CCEC). All events were held remotely. The Reach Code program hosted monthly reach code coordination meetings attended by local jurisdictions, regional organizations including RENs, CCAs and staff from CEC and CARB. The Reach Code program hosted two webinars: 1) "Battery Storage for Single Family Homes Cost-Effectiveness Analysis" and 2) "Tackling Residential Retrofits."

C. SDGE3253 SW-C&S – Planning & Coordination

Program Description

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

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;

[6] California Reach Codes, 2021 Frontrunner Articles, available at https://www.localenergycodes.com/content/newsletters#frontrunners.

and c) emerging technology and product teams. More recently, as building codes have begun to incorporate distributed generation, electric vehicles and batteries, coordination has expanded to strategy integration, distributed generation programs, clean transportation and others involved in grid management.

Implemented Strategies

The integrated Planning and Coordination (PC) subprogram approach of the planning and coordination elements requires managing perspectives, relationships, and expectations of multiple market actors. Codes and Standards impact the entire State and most building types, occupancy categories, and related technologies. The PC subprogram requires collaboration with the following stakeholders who either influence or implement codes and standards for buildings and appliances: a) CPUC, CEC, CARB, b) other IOUs, municipal utilities, and utilities in other States, c) national advocates such as National Resources Defense Council (NRDC), Northwest Energy Efficiency Alliance (NEEA), Sierra Club, American Council for Energy-Efficient Economy (ACEEE), Earthjustice, National Consumer Law Center, Consumer Federation of America, d) representatives of various manufacturing companies and industry groups such as Association of Home Appliance Manufacturers (AHAM), National Electric Manufacturers Association (NEMA), American Heating and Refrigeration Institute (AHRI), e) water utilities and local governments, and f) other parts of the compliance improvement supply chain such as building inspectors, Title 24 consultants, Contractor State Licensing Board (CSLB), and others.

Challenges/Changes for 2022

The planning and coordination activities require a strong ability to develop, manage and deliver codes and standards strategies to meet the ZNE (Zero Net Energy) goals in the future years. This subprogram will continue to adapt as more market actors look to the building and

appliance standards to meet California climate goals. These planning and coordination activities will continue to become more important as more stakeholders and market actors begin to drive the innovation needed to deliver aggressive climate and emission reduction goals.

2021 Program Accomplishments

With the absence of a formal ZNE subprogram, the C&S Planning and Coordination subprogram has taken a lead role for coordinating the various EE and non-EE aspects necessary to effectively support customers and the building industry to meet the State's ZNE goals. The ZNE effort is not limited to Title 24, but it supports the California Department of General Services' ZNE goals, and the design and construction industry's efforts to meet the various ZNE goals.

The PC program presented two ZNE webinars in 2021: "Rethinking Efficiency in Multifamily Water Heating" with 48 attendees and "Designing with Communities, not for Communities: Equity in ZNE" with 39 attendees.

The PC program created multiple ZNE market resources to move the construction market toward ZNE, GHG and climate goals including:

- Developed four "Action Bulletin" newsletters that profile key ZNE and decarbonization activities across California;
- Created three ZNE Factsheets including: "ZNE Frequently Asked Questions", "ZNE for Architects and Engineers" and "ZNE for Real Estate Professionals";
- Created two ZNE Case Studies for the San Diego "Ocean Discovery Institute" and the County of San Diego's "Borrego Springs Library" which are two key ZNE buildings in SDG&E Service Territory; and
- Created the "ZNE Project Guide" to assist market actors in pursuing ZNE construction practices.

In response to a request from CARB and Energy Division, the PC program supported the development of proposals to update the electric vehicle infrastructure and electric vehicle supply

equipment (EVSE) requirements in CALGreen (Title 24, Part 11) using the CASE report methodology, including a cost/benefit analysis. The PC team coordinated with clean transportation team members within SDG&E and with staff from SCE and PG&E, developed cost models and supporting information on expanding requirements for electric vehicle infrastructure and EVSE in multifamily and non-residential new construction scenarios for light, medium and heavy-duty vehicles at the close of the year. This IOU analysis was filed to support CARB's request for enhancements to the electric vehicle infrastructure and EVSE requirements in CALGreen (Title 24, Part 11) to the California Building Standards Commission (BSC) and California's Housing and Community Development (HCD). The Planning & Coordination program also coordinated research and market analysis for a presentation to the CEC, BSC and HCD leadership team on the potential for integrating "embodied carbon" into the 2025 or 2028 Title 24, Part 2, 2.5, 6 and 11.

XII. LEGACY INTEGRATED DEMAND SIDE MANAGEMENT (IDSM)

A. SDGE3261 Local-IDSM-ME&O – Behavioral Programs (EE)

Program Description

The purpose of the Local-IDSM-ME&O Behavioral (or Home Energy Report (HER)) 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 information provided may include the following:

- A normative comparison contextualizing a household's energy use against that of a set of "neighbors" with similar attributes.

- A personal comparison showing the household its energyuse over time.
- Energy efficiency and demand response recommendations comprised of tips and program promotions.

This program is also leveraged to deliver integrated energy efficiency and demand response program offers to the participating customers. Traditional economic models are based on using price and information to drive rational choice, yet customers are still not acting to adopt energy efficiency and demand response activities when 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 HER program averaged approximately 700,000 residential recipients in 2021. Program results include electricity and natural gas savings and serve as an entry point to additional services, including an online audit.

- 525k participants in Behavioral Demand Response (BDR) pilot.
- Web Portal Enhancements to improve customer experience.
    - Enhanced Home Energy Checkup webpage to include Advanced Disaggregation insights
        - Account Center for managing communication preferences
        - Bill Comparison updates
        - Customer Portal Data Browser with Cost Insights

- Gas AMI integration to support Dual-Fuel High Bill Alert experience.
- Home Energy Report (HER) 3.0 pilot completion and full HER 3.0 experience launch.
- Pool pump, CARE, and PSPS messaging.

Challenges/Changes for 2022

Changes for 2021 included a Behavioral Demand Response offering to customers to enable them to take steps to reduce their use during days with expected high demand. Also, migrating to the new utility customer information system (CIS) presented minor challenges in Q1, which led to gaps in interval billing, however, through testing and quality assurance protocols, problems were resolved, and customers only experienced a minor delay in their HER reports.

In 2022, SDG&E's HER will include Solar and EV customers; a customer population that was excluded in the past. This change will not only grow the population of the HER program, but should increase savings, provide more awareness to customers of their energy use, and make for a better customer experience.

Program Accomplishments

During the 2021 program year, the number of Home Energy Report recipients reached more than 700,000 and maintained a very low opt out rate. Electronic report open rates reached 62%, a 12% increase over 2020. beating the national average.

More than 21,500 residential customers logged into the portal to view offerings including usage, complete the home energy checkup, and/or to view similar home comparisons.

XIII. WORKFORCE EDUCATION & TRAINING (WE&T)

A. SDGE3254 SW-WE&T – Integrated Energy Education Training (IEET)

Program Description

The Workforce, Education & Training (WE&T) IEET Subprogram focuses on skills and market development trainings and education. IEET is composed of specific market sectors including commercial and residential sectors. There are two components to IEET; Technical Upskill and Core Energy Education Collaboration (CEEC). Technical Upskill provides training and education courses to promote industry trends and developments for advancing energy efficiency as a professional discipline. Technical Upskill is tailored towards people in a job/career, seeking energy-focused upskilling. CEEC is an initiative to reach training and educational organizations with the goal of forming strategic partnerships to reach a broader range of the workforce. SDG&E collaborates with various partners to infuse energy efficiency curriculum or add it as a stand-alone option, to promote the advancement of energy efficiency as a professional discipline. CEEC is for people on a chosen educational track towards a job/career or re-training for those who have identified an energy career path.

Implemented Strategies

SDG&E's WE&T program offers certification trainings and certificate programs through exam prep workshops. The Building Science Principles, Building Operator Certification, North American Technician for Excellence, Certified Energy Manager, and the Home Energy Rating System are examples of exam prep trainings that were offered in 2021.

SDG&E offered Home Energy Rating System certification courses to home performance professionals that provided an overview of the California Home Energy Rating System (HERS) Program. Students received an overview of the virtual Field Verification, and Diagnostic Testing Rater certification process and learned the importance of the Codes and Standards (C&S) that

define the California HERS Program. This course also teaches students important energy fundamentals and provides an overview of HVAC systems.

The WE&T Program provided on-demand, self-paced training specifically for Trade Professionals. This training provided an in-depth understanding of available utility incentive and rebate programs and offered assistance on the energy efficiency project submittal process and incentive payment requirements.

SDG&E continued its partnership with the Center for Sustainable Energy (CSE) to offer a homeowner webinar that provided a broad overview of adopting energy efficiency and solar. WE&T program managers worked with SDG&E's Customer Generation program to provide time-of-use and interconnectivity information during the webinar. A comprehensive homeowner series was also offered that addressed specific billing questions, the benefits of installing energy efficient equipment and learning how to correctly size a solar system, creating an integrated whole home project strategy.

SDG&E continued to collaborate with the National Electrical Contractors Association (NECA) to offer Title 24 C&S trainings. Coordination with multiple city jurisdictions allowed a broader reach to educate audiences on the upcoming changes in the code. These groups also helped promote other types of educational training to their members and provided feedback when new energy efficiency training was of interest or needed for their members.

Multifamily operations and maintenance training was offered to specifically target the property management of multifamily apartment complexes. Attendees were 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 including how to implement system and equipment

updates. Attendees learned how to review operating conditions and adjust set point controls to maximize efficiency. They also learned to identify the performance of building equipment and established a process for preventive maintenance to ensure maximum system performance.

SDG&E provided a comprehensive training for realtors, appraisers, inspectors, and lenders. Training was also offered to educate real estate professionals in this industry on the value of energy efficiency when buying and selling a home in the residential market. SDG&E partnered with workforce development organizations to target disadvantaged workers. Through this partnership, SDG&E's Energy Innovation Center Demonstration Garden served as a training opportunity for disadvantaged students between the ages of 18 to 26. The students participated in hands-on activities to maintain the Center's Demonstration Garden.

Challenges/Changes 2022

As part of SDG&E's virtual strategy plan, the program continued to offer all trainings online in 2021. SDG&E focused efforts on ensuring technical issues could be resolved quickly. To work through challenges such as connectivity issues or lack of familiarity with the platform on the part of speakers, additional training was provided to speakers to achieve a baseline of presenter knowledge specific to virtual implementation. This training will continue in 2022 as virtual training will be the primary method of administering training.

In discussions with several training and education organizations, SDG&E discovered some organizations had a lengthy review and approval process for adopting new curriculum. This presented a challenge for Core Energy Education Collaboration as some organizations cited years-long approval processes. SDG&E will continue to look for ways to help educators acknowledge and understand the value of energy efficiency as a viable career path and potentially overcome curriculum process challenges.

SDG&E continued to adapt and offer customers additional virtual channels for learning. On-demand training was offered as a solution for some training classes for students who were not able to attend live scheduled webinars. SDG&E worked with trainers to identify the best classes suited for on-demand and worked with the trainers/speakers to develop it. This option allowed students to view training content at their convenience. In 2021, approximately 750 on-demand training courses were offered.

Due to continued uncertainty around the pandemic in 2021, some certification testing, hands-on lab experience, and food service equipment demos continued to be a challenge. In addition, energy efficient tools from the Resource Lending Library were put on hold due to the stay-at-home order. SDG&E will be filing a change to the WE&T program Implementation Plan to reflect updates in these areas in 2022. In addition, SDG&E will not be renewing the lease for the Energy Innovation Center in 2022. The WE&T program will continue offering Technical Upskill training virtually until the planned solicitation and third-party implementation, with an implementor expected to take over the program in early 2024.

2021 Program Accomplishments

On-Demand training covering customer rebate and incentive programs specifically created for the Trade Professional network was viewed by over 40 Trade Professionals. More than five certification workshops were offered through Technical Upskill. Over 100 Energy Codes and Standards classes were promoted via WE&T marketing efforts. An estimated 20 training courses were offered to educate residential real estate professionals on the value of energy efficiency. Over 570 residential customers participated in the home energy training. Overall, more than 9,100 students attended Technical Upskill training and seven collaborations were established as part of Core Energy Education Collaboration. The WE&T program's

customer satisfaction surveys remained steady throughout the year with satisfaction remaining greater than 85% for most of the year.

B. SDGE3255 SW-WE&T – Career Connections

Program Description

The WE&T Career Connections Subprogram goal is to promote energy efficiency and energy/green sector career awareness along all educational paths (levels) from K-12 to post-secondary. The Career Connections Subprogram achieves its energy efficiency educational goals by facilitating energy efficiency strategic planning and educational programming at all educational paths. The subprogram integrated 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 were correlated to the California Department of Education's content standards Implemented Strategies.

SDG&E helped engage the next generation of energy-related workers through supporting energy education and outreach for the first half of 2021 through the local Career Connections program while it was active. Students learned through online, hands-on, and project-based activities that include the Water-Energy Nexus and why it matters, how solar energy is made, created working circuits, and more. Educators were also trained on how to incorporate energy education lessons to enhance their existing curriculum.

Challenges/Changes for 2022

Due to the COVID-19 pandemic and subsequent stay at home orders, some schools were shut down and in-person teaching halted for a portion of the year. Through virtual learning, online content was created to offer teachers and students a diverse and versatile set of services designed to suit their needs. In-person and hands-on learning resumed in schools that allowed it. SDG&E's Energy Innovation Center remained closed in 2021, therefore the tours associated

with the local Career Connections program were not offered. The Demonstration Garden was available for outdoor learning experiences.

SDG&E worked with PG&E and other IOUs to launch and complete a solicitation for the Career Connections program. The local Career Connections program shut down at the end of June 2021 and SDG&E supported activities that ensured a successful transition. In 2022, the Career Connections program will be administered by PG&E.

2021 Program Accomplishments

Due to the program shutting down mid-year, the number of students served was reduced by half from 2020. Approximately 5,000 students were reached at K-12 schools. Over 50% of the schools participating in the program were Title 1 schools and thus supported opportunities for disadvantaged students.

XIV. OTHER LOCAL PROGRAMS

A. 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 non-residential customers in the public sector. The program is designed to increase the adoption of energy efficient measures by offering an energy efficiency audit as well as energy efficiency equipment and installation at no cost or at a discounted price.

Implemented Strategies

SDG&E extended its contract with the program's primary contractor in 2021 with a new focus on the public sector. An additional contractor was extended through the first quarter of 2021 with a continued focus on completing projects for K-12 customers engaged at the end of 2020.

Historically, the program had only been offered to non-residential customers with a monthly demand of less than 200 kW. As the contractor began to work with public customers, it was noted that these customers typically have multiple sites with the potential for energy efficiency upgrades, but many were ineligible due to the maximum demand limitation. Additionally, the smaller sites that were eligible had limited equipment that qualified for upgrades. At the end of August, SDG&E removed the demand requirement to better meet the needs of public sector customers until a new third-party program solicitation can be finalized to serve the sector.

In 2021, the program leveraged the support of Account Executives to promote the program and help establish relationships with key decision makers to encourage further participation. SDG&E also collaborated with its program contractor to develop new marketing material, including a program brochure with a customer testimonial, to help with customer recruitment as well. Direct outreach was also conducted through a program presentation provided during a community K-12 collaborative monthly meeting.

Challenges/Changes for 2022

At the beginning of 2021, new third-party programs launched to serve SDG&E's small and large commercial customers. The launch of these new programs limited the number of customers that could be served through the Direct Install Program in comparison to previous years. The shift to focusing on the public sector brought on a new set of challenges. The contractor found that public sector customers tend to have a lengthier approval process and reaching key decision makers proved to be more difficult than anticipated. Additionally, business restrictions and regulations related to the COVID-19 pandemic continued to limit customers' willingness to participate in the program. Public sector customers were hesitant to

allow outside contractors into facilities due to heightened safety precautions. Furthermore, customers that decided to move forward with projects had limited scheduling availability and audits and installations typically had to take place outside of business hours to minimize personal contact. The program also struggled with supply chain issues and shipment delays. In fact, the contractor faced difficulties in acquiring qualified equipment in sufficient quantities to meet customer demand, and shipments of equipment were delayed on several occasions. Another challenge for the program is that customers resist installing measures with a co-pay and tend to opt for no-cost measures only. In 2022, new third-party programs serving K-12 and federal customers will launch, so the Direct Install Program will focus solely on serving local government and higher education customers while solicitations for those customers remain underway.

2021 Program Accomplishments

In 2021 the Direct Install Program contractors successfully serviced over 60 public sector customer sites, installing energy efficient equipment, while also ensuring customer satisfaction.

B. 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. The program was 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

D.16-08-019 clarified that the new third-party programs must be designed and presented to the utility program administrator by the third-party; utilities may consult and collaborate, using their expertise, on the ultimate program design implemented by the third-party. In 2018, SDG&E began the implementation of these solicitations, which included setting up its EE Procurement Review Group (PRG), hiring of Independent Evaluators (IE) and developing best practices with other utilities. In 2021 SDG&E continued to develop and refine internal processes and procedures, utilizing supply management best practices and an experienced team to ensure that all the guidelines and complex requirements of the Commission and the Energy Efficiency Procurement Review Group were met.

Challenges/Changes for 2022

SDG&E expects to execute contracts for the following local program sectors: Agriculture, Public Sector - Government, Industrial, Industrial-Port Tenants, Single Family and Behavioral by the end of 2022. Executed contracts for these six solicitations are expected by December 31, 2022 to comply with the Commission's 60% portfolio outsourcing requirement. Local solicitations that will be released to the market in 2022 include Non-Residential Behavior, Workforce Education & Training, Residential Equity, and Small Business Outreach.

2021 Program Accomplishments

SDG&E continued to develop and launch third-party solicitations, in accordance and compliance with Commission direction. Engagement with the Energy Efficiency Procurement Review Group and pool of Independent Evaluators to monitor the solicitation process and

provide input and feedback also continued. The collaboration resulted in best practices and lessons learned that will continue to guide and improve the third-party solicitation process into 2022.

In 2021, SDG&E executed contracts for Public Sector - K-12, Public Sector - Federal as well as Plug Load & Appliances, which met the 40% compliance deadline of December 31, 2021. Advice Letters for Public Sector - K-12 (K-12) and Public Sector - Federal (Federal) were filed on July 21, 2021. The K-12 Advice Letter received approval on August 18, 2021 and Federal on September 10, 2021. The Implementation Plan Webinar presentations for the K-12 program was held on October 7, 2021 and for the Federal program on October 29, 2021.

SDG&E continued to manage solicitations for Agriculture, Residential Single Family, Public Sector – Local Government, Residential Behavioral, Industrial, Industrial – Port Tenants, and Statewide Residential HVAC Quality Installation/Quality Maintenance. .

C. 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 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.

The implementer regularly attended agricultural events and trade shows to network, promote the program and inform customers of the different offerings and services available to them.

Challenges/Changes for 2022

The SAE Program will continue in 2022 but will ramp down in Q4 when the new third-party Local Agriculture Program is available to customers.

Program Accomplishments

To increase participation, the SAE Program implementer conducted program marketing and outreach throughout 2021. Although several customers expressed interest in the program, they did not submit applications in 2021. In late Q4, one project was identified and will be completed in 2022.

D. SDGE3317 HOPPs Retrocommissioning (RCx)

Program Description

SDG&E's HOPPs RCx Program is designed to offer a systematic process to identify operational and maintenance improvements that optimize building performance and ensure that building systems function efficiently and effectively. The program ensures persistence of savings by requiring customers to commit to a three-year maintenance plan.

Implemented Strategies

In 2021, the SDG&E HOPPs RCx Program completed in-depth evaluations of all technical calculations, created whole building models, and supported installation and verification for two different projects in the pipeline. In parallel, the program supported annual monitoring

analysis for sixteen different projects that completed installation and verification between 2018-2020, all of which reached annual milestones that required measurement and verification of the projected annual energy savings.

The two projects that the program focused on installing in 2021 started the year pending project installation, with the full building investigation already complete. The program focused on completing installation by the end of March; however, this timeline was disrupted by limitations that customers and projects faced due to COVID-19. The limitations varied and were unique to each customer. As healthcare facilities, both sites had facility staffing challenges and other priorities that often trumped getting the project completed. The latter-completed project had complex controls and programming measures that required extensive commissioning work to be performed before sign-off. The program worked hand-in-hand with customers to address each of their challenges, and despite the obstacles, all installations were completed by the end of June.

Throughout the implementation stage, the program provided each of the projects with detailed technical assistance and project management support. The program also scheduled regular virtual meetings with trade-allies, engineering providers, and customers to track progress and coordinate installations that were aligned with program findings and recommendations. Some measures were impacted by COVID-19. Customers that faced significant decreases in revenue were less motivated to invest in the capital improvements identified to reduce their energy consumption. Furthermore, an increased focus on improving indoor air quality and introducing more outside air to indoor spaces took precedence over energy saving opportunities tied to HVAC system and controls adjustments. Customers with office buildings and event spaces were also hesitant to invest in energy efficiency until vacancy returned to normal levels.

The program worked alongside each customer to understand their concerns, address the impacts of COVID-19, and identify creative solutions that supported cost and indoor air quality concerns, while also completing all required and some recommended measures. The total expected energy savings on a per building basis were not compromised either.

For the projects that completed installation and verification in 2018-2020 and achieved scheduled annual milestones throughout 2021, the program identified and reviewed non-routine events and any deviations from expected savings levels. At completion of the first, second, or third year of monitoring for each installed project, the program met virtually with customers to share a draft of the previous year's modeled savings and to discuss results of the customer's completed maintenance log. Following this meeting, the program finalized the whole building model based on customer input, and when applicable, supported the customer in troubleshooting and correcting any measure issues to get savings back on track in a timely manner.

Challenges/Changes for 2022

COVID-19 continued to pose challenges in 2021. Addressing a multitude of non-routine events given irregular levels of occupancy and/or vacancy due to COVID-19 will continue to be difficult. The program has fifteen projects in various stages of annual monitoring, and three projects were closed out in 2021. Nearly all projects were impacted by COVID-19 and will require Non-Routine Event (NRE) reviews and adjustments. In 2021, the program finalized templates and guidelines to standardize the NRE processes and procedures and to document the impact of NREs and how they are factored into each building's savings calculations.

2021 Program Accomplishments

Despite several obstacles and customer concerns that put projects in jeopardy, the program successfully retained all customers in the 2021 pipeline. The program also completed

installations for two projects, which resulted in significant energy savings. In addition, eight projects completed monitoring year evaluations, including two projects which completed the third and final year of monitoring.

XV. THIRD-PARTY IMPLEMENTED PROGRAMS

D.18-01-004 established the required process for third-party solicitations in the context of the EE programs rolling portfolio, overseen by the IOUs as program administrators (PAs). D.18-01-004 requires a two-stage solicitation approach to soliciting third-party program design and implementation services as part of the EE portfolio and sets the expected progress of these solicitations over the next few years (2019 through 2022) to meet the minimum 60 percent Third-Party Implementation of the IOU portfolio.[7]

D.18-01-004 requires the IOUs to utilize procurement review groups (PRGs) for design and conduct of solicitations,[8] as well as an independent evaluator (IE) structure analogous to the structure utilized by supply-side solicitations, with the exception that the IEs must be specifically hired for their energy efficiency expertise.[9] The IEs provide support to the PRGs and updates to the Commission through semi-annual Independent Evaluator reports, as well as individual reports on the solicitation process resulting in any contract award valued at $5 million or greater and/or with a contract term of longer than three years, to be submitted along with the IOU's Tier 2 advice letter filed with the Commission for that contract.[10]

As described above, D.18-01-004 requires the IOUs to file a Tier 2 AL for each EE Third-Party contract valued at five million ($5MM) or more and/or with a term longer than three

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7 D.18-01-004, Conclusion of Law (COL) 5 at 57 and OP 1 at 61.
8 *Id.* at OP 3 at 61-62.
9 *Id.* at 36.
10 *Id.* at 2, 37.

years, for Commission review.[11] As of December 31, 2021, SDG&E met the 40 percent minimum requirement. SDG&E's Third-Party information is available at Appendix A Table 10.

A. SDGE4001 Single-Family Program

SDG&E's planned program implementation of the Single-Family program was delayed due to the need for another solicitation to be run beginning in 2021. Therefore, there was no program implemented in 2021.

B. SDGE4002 Multi-Family Program

Program Description

The Residential Zero Net Energy Transformation (RZNET) program is a new innovative way of serving multifamily and manufactured homes. RZNET program design is a turnkey, cost-effective, zero net energy, end-to-end solution that transforms multifamily and manufactured home community owners, operators, and residents into knowledgeable stewards of water, electricity, and natural gas. In compliance with SB 350, Clean Energy and Pollution Reduction Act of 2015, RZNET program participants are put on the path to zero net energy, beginning with direct install measures, complimentary ASHRAE Level 1 audits, sales consultations acting as catalysts for advanced energy efficiency, solar PV installations, and battery storage opportunities for multifamily and manufactured housing properties.

Implemented Strategies

Program measure engineering, development, and collaboration are all vital pieces to a resource program's success. Recognizing their value, SDG&E made these an important part of RZNET's implementation strategy. The strategy was realized through scheduled monthly meetings with the implementer, the implementer's contracted engineering firm, and SDG&E's

[11] *Id.*, OP 2 at 61.

engineering team to discuss measure development and the proper implementation of approved program measures. These meetings led to the measure coordination and implementation of multifamily common area tank insulation and multifamily common area pipe insulation in early 2021. These two measures made significant contributions to the program's 2021 net therms and TRC goals and proved the strategy to be fruitful third-party

Going into 2022, the implementer and SDG&E are bringing duct optimization to RZNET for implementation in the first quarter of the year. The team is also working on bring water energy nexus opportunities to the program through an agreement between the San Diego County Water Authority and the implementer.

2021 was the program's first year of implementation and a proving ground for its proposed approach to not only be cost-effective, but also a pathway to zero net energy. The approach of leading with no-cost direct install measures immediately followed by an invitation for a complimentary walkthrough energy audit and sales consultation yielded great results. The RZNET program identified many opportunities for upgrading inefficient water heating and HVAC equipment that resulted in the sale and installation of high efficiency water heating and HVAC systems. These customers are closer to achieving zero net energy and the implementer continues to maintain contact with the RZNET-served customer base through email drip campaigns that generate additional ZNE upgrades.

Challenges/Changes for 2022

2022 will see the addition of the duct optimization measure and the retirement of refrigerant charge measures due to the global warming potential associated with refrigerant. The program will adjust to compensate for the loss of the refrigerant charge measures by focusing on the duct optimization measure. The timing for the addition of the measure is ideal because the

duct optimization measure addresses an unmet need for manufactured housing resulting in a significant positive opportunity for the program's current reality and future. In 2022, the implementer and SDG&E will work closely to ensure alignment with data fields and reporting infrastructure. Going into 2022, the implementer and SDG&E have held regular meetings with all stakeholders to ensure compatibility.

2021 Program Accomplishments

The RZNET program exceeded its contracted TRC goal for 2021. The entire allocated budget of the program was utilized, all while supporting thousands of multi-family customers through quality energy efficiency technology installations and customer support. Geotagged timestamped photos were integrated into RZNET's quality assurance plan and played an important role in allowing SDG&E's inspection staff to complete many of the pending program inspections in an expedited manner, something that would have been otherwise very complicated with COVID protocols in place for most of the 2021 program year. Geotagged timestamped photos provide assurance that program measures reported are installed and allow for SDG&E inspectors to review program projects virtually thus improving the efficiency, health, and safety of program operations.

C. SDGE4003 Small Commercial Program

Program Description

SDG&E's Small Commercial Program (SCP) delivers comprehensive, integrated energy efficiency (EE) and demand response (DR) savings to commercial customers with a total maximum monthly demand of 20 kW or less. The SCP complies with SDG&E and CPUC requirements to deliver program goals through an integrated, holistic demand-side offering. The SCP's integrated delivery team provides full customer service and a complete EE solution through a single point of contact. Offering a wide range of measures, the Program sought to combine and leverage savings from direct install and quick payback measures, such as retro-

commissioning and operational measures, along with longer payback, high-impact measures to deliver financially attractive targeted measure bundles for individual small commercial buildings.

Implemented Strategies

Marketing activities ramped up during the second quarter, with postcard mailers sent out in May and an email campaign deployed in June. The June email campaign highlighted a Do-It-Yourself (DIY) initiative which offered Type-A LED lamps at no-cost and educated customers on how to install the lamps in a safe manner. This promotion received a positive response from interested customers and helped increase participation in the program. Additionally, the implementer's call center began outbound dialing efforts to eligible customers to generate leads. The implementer continued to raise program awareness online via Search Engine Marketing (SEM), including display ads and their website throughout the remainder of the year.

Challenges/Changes for 2022

Although the Small Commercial Program launched in 2021, the program was proposed and designed prior to the COVID-19 pandemic. The pandemic and resulting economic environment caused many changes not anticipated when the program was proposed and designed that were beyond the implementer's control. Small businesses, in particular, were severely impacted by the economic downturn resulting from the pandemic. Shutdowns made it difficult to engage with these customers and many small businesses struggled to stay afloat. As a result, energy efficiency upgrades were not a top priority, especially those with a copay. Furthermore, the implementer found that some small businesses they engaged had shut down before installation or inspections could even take place. The implementer also found that this customer base had very limited opportunities for equipment upgrades due to the small size of their

facilities. They strived to incorporate non-lighting measures, but after further analysis, realized that the savings for many non-lighting projects were insufficient to justify adding them to the program and would have resulted in high co-pays that this customer group was averse to paying in the current environment. Another significant challenge the program faced was maintaining cost-effectiveness. The implementer struggled to procure qualified equipment at a reasonable price, as workpapers were updated and supply chain issues emerged. The resources needed to support operations and satisfy complex measure package requirements were found to be cost-prohibitive and unsustainable. Despite efforts to bring the program back on track, SDG&E deemed the program unable to perform per the terms of the Scope of Work set forth in SDG&E's agreement with the implementer. On April 19, 2022, the advice letter to close the Small Commercial program was approved (AL 3972-E). SDG&E plans to solicit for a new Third-Party Program under the Equity Segment that targets the hard-to-reach and underserved small business market. In the interim, SDG&E intends to expand its legacy program, Business Energy Solutions (BES) (SDGE3226), to serve this customer base and help contribute to SDG&E's energy efficiency goals.

2021 Program Accomplishments

Despite the challenges faced by this program, in 2021, the program implementer reached over 2,700 customers and serviced over 1,300 small business locations, while ensuring customer satisfaction. The program enrolled most customers through the Type-A LED initiative, which brought in most the program's claimable savings. Development and approval of the Modified Lighting Calculator, a statewide tool that streamlines custom lighting enrollment calculations, was also a notable achievement as the tool expands eligible projects and can be utilized for other programs in the future.

D. SDGE4004 Comprehensive Energy Management Solutions (CEMS) Program

Program Description

The Comprehensive Energy Management Solutions (CEMS) Program provides end-to-end program implementation services, including marketing, outreach, engineering, operations, customer service, and data management and reporting, to large commercial electric and gas customers on qualifying rates schedules with a monthly demand greater than 20 kW in SDG&E's service territory. The Program leverages the implementer's outreach staff, team of subcontractors, and network of trade professionals to provide customers with a single program that addresses all their energy efficiency needs.

Implemented Strategies

During the first quarter, the CEMS program emphasized rolling the program out to the general market and informing customers of available incentives, with the objective of building name recognition to make outreach efforts more effective and encourage inbound interest. This effort included developing the program's trade professional network, hosting webinars, and building direct relationships with large customers. To help the implementer construct a pipeline and accelerate program enrollment, SDG&E continued to share updated lists of qualifying customers with the program implementer.

Throughout the year, the implementer continued to test engagement methods focused on attracting potential participants and expand marketing tactics that demonstrated success, primarily digital and search engine marketing (SEM) tactics. The program also conducted a variety of targeted marketing campaigns to reach specific sectors or promote specific energy-saving technologies. For example, in support of the COVID-19 vaccine, the program provided additional incentives for Ultra Low Temperature (ULT) Freezers. This effort included three campaign emails to raise market awareness and direct outreach to distributors and customers.

Later, in response to businesses reopening throughout California, the program launched a food service and hospitality initiative, which included targeting major food equipment distributors to inform them of the program's offerings for their customers as well as preforming direct outreach to large hotel chains. The program also sought to leverage market interest in auto door closers by using customer data to pinpoint neighborhoods that have a high concentration of grocery stores, restaurants, liquor stores, and convenience stores who could likely benefit from the offering.

Expanding partnerships with well-known local institutions was another focus in 2021, which provided opportunities to reach business owners through several in-person events, such as the San Diego Chamber of Commerce golf tournament and the San Diego Building Owners and Managers Association (BOMA San Diego) Day at the Races. Events like these helped position program representatives as consultants within the business community and build trust, which is an important factor in how business owners and managers make decisions. In addition, the CEMS program utilized its trade professional network to develop new projects and install energy-efficiency equipment throughout the SDG&E territory, routinely adjusting incentive levels or adding additional measure offerings to drive increased participation. The implementer also enlisted the help of a local bilingual contractor to assist with the implementation of certain projects.

Challenges/Changes for 2022

The program officially opened for customer participation at the start of 2021 and initial participation in the CEMS Program was slower than anticipated as a result of program ramp-up. Over time, the program has seen an upward monthly trend of installed electric savings, however, raising customer awareness of gas projects is necessary. Additionally, the development and lead

time for custom projects proved to be longer than anticipated. These challenges impacted installations for the year and affected total program savings since custom projects typically provide higher savings per project. Contracting and hiring delays were another challenge for the implementer that caused the program's Direct Install launch date to be pushed back until 2022. Furthermore, interactive effects from measures such as Anti-Sweat Heater (ASH) controls, resulted in negative therm savings, making gas savings difficult to achieve. Lastly, the balance between installed savings and cost-effectiveness needs to continue be actively managed.

2021 Program Accomplishments

The Program spent a large portion of the second quarter of 2021 implementing a digital strategy and establishing the program's digital presence using paid as well as no-cost digital tools. In the second quarter, the program website received a total of 835 new users and 1,853 sessions. Over the prior quarter, new users increased approximately 64.69% and sessions increased about 108.44%. This growth corresponded with increased marketing efforts that targeted potential customers. The program's email campaigns also regularly achieved average open and click-through rates that exceeded industry averages.

In 2021, CEMS saw success with the deemed platform, with all savings to date coming from deemed measures. The program's focus on working with trade professionals allowed for a large influx of deemed projects to be submitted, primarily in the grocery sector, with auto door closers and ASH controls making up the majority of projects. To better facilitate deemed projects, CEMS developed an automated process currently being utilized by trade professionals, known as bulk uploads. Using this new method, the implementer was able to process hundreds of applications quickly and efficiently in the third and fourth quarters. Deemed projects serve as quick wins and can help the implementer and program to build trust with customers which, in

turn, should generate interest for participants to pursue additional energy efficiency projects.

The implementer is also focused on developing and submitting custom and NMEC projects that will allow for increased savings. In 2021, SDG&E completed its review of the program's first two custom projects, which will be ready for installation in 2022. CEMS currently has six additional custom projects in development as well.

Lastly, customer satisfaction is essential to the program's success, and throughout the year, the implementer was hard at work building relationships with large customers and market partners. As a result of these efforts, the program saw multiple repeat customers in 2021 as well as high ratings from customer satisfaction surveys.

E. SDGE4011 K-12 Energy Efficiency Program (KEEP)

Program Description

The K-12 Energy Efficiency Program (KEEP) was approved on October 18, 2021, pursuant to SDG&E Advice Letter 3814-E. In 2021, program ramp up occurred with the Implementation Plan filing and program setup between the implementer and SDG&E. KEEP is a third-party delivered program for SDG&E, which will deliver high-quality measurable savings to public and charter schools through a direct install model. Savings will be claimed using a population Normalized Metered Energy Consumption (NMEC) Measurement and Verification (M&V) approach. The program will be implemented by California Retrofit Incorporated (CRI). A key feature of the KEEP program is the KEEP Concierge, a single point of contact for all questions related to energy efficiency and sustainability.

Armed with extensive data from prior Prop 39 school audits, the KEEP team created a list of turnkey measures across HVAC and lighting, which will deliver measurable energy savings. The measures that will deliver the most energy savings are provided to schools at no cost, with additional lighting measures provided at a heavily discounted rate from market pricing.

Additionally, the KEEP Concierge will be tasked with researching other efficiency opportunities commonly found in schools, such as pool heaters and pumps, and refrigeration. KEEP will work with each customer to help with financing needs by leveraging On Bill Financing.

Challenges/Changes for 2022

The KEEP program's solicitation was not finalized and approved until October 18, 2021. The remainder of the year was spent filing the Implementation Plan and setting up the program to run in 2022. In 2022, KEEP will work to market and gain traction with SDG&E's K12 market sector.

2021 Program Accomplishments

In 2021, the K-12 Market Sector solicitation finalized which culminated in the contract AL being approved on October 18, 2021. The remainder of the year was dedicated to Program ramp up activities to allow the implementer to use 2022 for full program implementation.

F. SDGE40012 Federal Energy Program (FEP)

Program Description

The Federal Energy Program (FEP) was approved on September 10, 2021, pursuant to SDG&E Advice Letter 3815-E. The program provides end-to-end program implementation services, including marketing, outreach, engineering, operations, customer service, and data management and reporting, to Federal Buildings (including hospitals owned and/or operated by the Federal Government), US Postal Service, Military Bases, and Tribal Nations electric and gas customers on qualifying rates schedules.

Energy savings will be delivered through strategic communication and direct customer outreach of targeted offerings:

- Deemed – Offers incentives for the installation of select measures based on approved workpapers.

- Custom/Custom Express – Offers customers with unique needs access to incentives that do not align with the Deemed offering.
- Normalized Metered Energy Consumption (NMEC) – Offer available to appropriate, eligible customer sites that meet specific site-level criteria.

Challenges/Changes for 2022

The FEP program's solicitation was finalized and approved on September 10, 2021. The remainder of the year was spent filing the Implementation Plan and setting up the program to run in 2022. In 2022, FEP will work to market and gain traction with SDG&E's Federal market sector.

2021 Program Accomplishments

In 2021, the Federal Market Sector solicitation was finalized, which culminated in the contract AL being approved on September 10, 2021. The remainder of the year was dedicated to Program ramp up activities to allow the implementer to use 2022 for full program implementation.

XVI. SW THIRD-PARTY PROGRAMS

D.18-05-041 assigned lead Program Administrators (PAs) to specific Statewide programs and downstream pilot programs, and vested each Lead PA with full authority, including assignment of personnel to manage the program on behalf of the Commission.[12] The Commission identified the various areas of sole responsibility for the lead PA.[13] Among these responsibilities is the "procurement and contract administration" of the SW program.[14] The following program narratives were prepared and provided by the lead IOU for each Statewide program.

[12] D.18-05-041 at 79-80, 90-92.
[13] D.18-05-041 at 172-173 (Conclusion of Law 13).
[14] *Id.* at 172 (Conclusion of Law 13(b)).

A. Statewide Codes & Standards Programs

1. SDGE_SW_CSA_Natl - Codes & Standards Advocacy - National Codes & Standards Advocacy, SDGE_SW_CSA_Appl - Codes & Standards Advocacy - State Appliance Standards, and SDGE_SW_CSA_Bldg - SW Codes & Standards Advocacy

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Pacific Gas & Electric 2021 Annual Report for the performance for the respective Statewide Program.

2. SDGE_SW_CSA_Natl_PA - Codes & Standards Advocacy - National Codes & Standards Advocacy, SDGE_SW_CSA_Appl_PA - Codes & Standards Advocacy - State Appliance Standards and SDGE_SW_CSA_Bldg - SW Codes & Standards Advocacy

These are PG&E led Statewide C&S Advocacy Subprograms that went into full effect in early 2020. SDG&E included an administrative budget for these Statewide programs in which SDG&E is not the Lead Program Administrator. As a Funding Program Administrator, SDG&E implements activities and functions that are covered under this budget for these three Advocacy subprograms as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.
- IT overhead related to regulatory budget filings.

In addition, SDG&E, together with SCE as a funding PA, provided the following key support per the Lead PA's request and direction:

- PG&E and the Third-Party vendors worked with the IOUs on advocacy objectives by providing draft and final documents for review and comment by SCE and SDG&E codes and standards representatives prior to docketing with the Energy

Commission, DOE, or EPA. Advocacy review documents include Title 24 and Title 20 Codes and Standards Enhancement (CASE) reports, Code Change Savings Reports (CCSR), federal comment letters, and IOU comments to be docketed in response to industry feedback on C&S proposals.

- When requested by PG&E, SDG&E attended PG&E-scheduled meetings where non-lead IOU input from across service regions was necessary to support Energy Commission (Title 24 and Title 20) and Department of Energy rulemakings.
    - For National Codes and Standards, SDG&E responded to DOE, EPA, FTC, ASHRAE and IECC rulemakings in coordination with PG&E through reviewing third-party vendors' appliance and building federal comment letters, laboratory data sets, test procedures, building modeling documentation, cost effectiveness justification and compliance pathways to advance the Federal EE and DER appliance and building regulations.
    - For State Appliance Standards, SDG&E participated in meetings and responded to CEC Title 20 and Demand Flexibility rulemakings in coordination with PG&E through reviewing the third-party vendors' CASE reports, comment letters, data collection and measure analysis to advance the State EE and DER appliance regulations.
    - For Building Codes Advocacy, SDG&E participated in meetings and responded to CEC's 2022 and 2025 Title 24 – Part 6 in coordination with PG&E through reviewing the third-party vendors' CASE reports, measure selection process, data sets and compliance recommendations to advance the State EE and DER building regulations.
- SDG&E responded to CPUC technical data requests sent to the lead and non-lead IOUs, and supported PG&E in responding to CPUC data requests by providing IOU and region-specific information. The data requests included Codes & Standards IOU and region-specific information to inform the Advocacy program, 2022-2023 BBAL and 2024-2031 Business Plan development.

The Statewide coordination is structured to streamline the administration costs while maintaining the needed support for the Advocacy subprograms.

B. SDGE_SW_HVAC_Up - SW Upstream HVAC Commercial Program

Program Description

SDG&E is the lead administrator for the Statewide Upstream HVAC program, an upstream and midstream program that offers HVAC measures including high-efficiency commercial unitary air conditioners, commercial heat pumps, commercial chillers, commercial

space heating boilers, residential air conditioners, residential heat pumps, residential gas furnaces and residential gravity wall furnaces. The Program captures savings through the movement of incentivized deemed measures. The Statewide Upstream HVAC Program was proposed, designed, implemented, and delivered by CLEAResult and is named "Comfortably California."

Comfortably California is offered consistently across the State, and is made available to all Distributors, Retailers and Manufacturers executing sales for installations in all four IOU territories.

Implemented Strategies:

The program follows the same general logic as earlier upstream and midstream programs in that it aims to influence the market through changes in stocking and selling practices at the retailer, distributor and manufacturer levels, thus influencing the end-users and installation contractors. By promoting high-efficiency equipment, the program is designed to encourage manufacturers to develop California-specific equipment and guidelines to further influence positive change in California. As with previous upstream and midstream models, there are efficiencies in implementation to be leveraged by maintaining fewer, deeper participant relationships at the higher levels of the HVAC supply chain. The program actively recruits HVAC distributors and provides online rapid validation tools and secure online portals to ensure high levels of participation, security, and customer satisfaction. The program is designed to adapt to market changes and retains flexibility in product offerings and incentive levels, and flexibility around product support, training curriculum and contractor and customer-facing education.

The current implementation agreement term is three (3) years with annual review processes and ongoing performance evaluation. The program is offered consistently across IOU

territories, and made available to all distributors, retailers and manufacturers executing sales for installations in all IOU territories.

The program hosted partner forums to learn about problems and successes and used these forums to pivot the implementation of the program as needed. The program supports its partners through marketing and has worked directly with several distributors on marketing projects to help promote high-efficiency products.

The Implementer ran promotions throughout the year to help boost the sale of eligible measures. This was an effective tactic for achieving greater sales in each period and was well received by distributors.

During the year, data collection requirements for midstream/upstream programs was an item of discussion between CPUC ex-ante and ex-post staff, SDG&E and the implementer. Prior to program launch, SDG&E required that the installation contractor information be included in the data collection plan or the program in order to implement the necessary quality assurance checks. It was SDG&E's position that the installation contractor information was necessary to validate the claims were accurate as the contractor would have information on site eligibility that would not be available from the distributor. The implementer pivoted to accommodate this requirement at no additional cost to ratepayers for 2021. This additional data requirement at the enrollment level had a negative impact on participation and program satisfaction. Adding requirements for installation contractor data deviated from the original design of the program, which limited the contractor and end-user data requirements. These additional data requirements resulted in reduced participation and may create issues with future participation in upstream/midstream programs.

Challenges/Changes for 2022:

For 2022, in response to the latest HVAC Impact Evaluation recommendations, pursuant to requirements associated with program measures, SDG&E is requiring the implementer to capture end-user and installation contractor data on every distributor and manufacturer enrollment. This requirement is expected to significantly increase the cost of implementation and reduce TRC. First, some of the distributors participating in the program do not have the administrative capabilities to provide the requested levels of data. The additional program costs are designed to help offset some of the additional administrative costs to program partners. Furthermore, due to the change in the data requirements, it is estimated that many partners will have to pass additional cash savings to their buyers in order to collect the installation contractor and end-user data. Because of this, the program is expected to adjust its marketing approach to target installation contractors to inform them of the new data collection requirements.

The program will be developing and offering contractor-facing trainings on Fuel Substitution.

2021 Program Accomplishments:

The program has underperformed against the goal for the year. This is mostly due to impacts from COVID, supply chain disruption, measure-level data collection, and reduced incentives when compared to prior years.

Unfortunately, due to the revised data requirements, the implementer was not able to recruit any new retailers for participation in 2021. This setback resulted in fewer than expected sales of the Gravity Wall Furnace measure, responsible for a significant portion of the program's therms savings.

Against strong headwinds, the program saw a high level of participation, exceeding its internal distributor recruitment goals. Throughout the 2021 program year, Implementer Account Managers maintained strong relationships, which fostered honest communication among program partners. Despite the program's challenges, it received high praise from its partners, and we continue to receive high satisfaction scores on regular distributor surveys. Many of the program's partners have committed to future participation.

C. SDGE_SW_HVAC_Up_PA – SW Upstream HVAC Program (Utility)

Program Description:

SDG&E is the lead administrator for the Statewide Upstream HVAC program, an upstream and midstream program that offers HVAC deemed measures within the four IOU service territories. The SDGE_SW_HVAC_Up_PA program operates as the internal utility general administrative support portion of the SW-HVAC program. The program performs duties consistent with the Commission-approved administrative functions detailed in Advice Letter 3599-3-A/2897-G-A.

Implemented Strategies:

In 2021, the program performed oversight of the established initial ramp-up activities which were delivered by the implementer, in accordance with CPUC guidance. Additionally, the SDG&E Utility SW-HVAC administrative program reviewed the program measure offerings, quality control procedures, and the measurement and verification plan to ensure that all measures could be accurately reported and that the Statewide program complied with the most current Commission requirements. The additional necessary contract administrative activities performed in 2021 were consistent with Administrative Overhead costs and included, but were not limited to, contract administration labor, accounting support, IT services and support, reporting database,

regulatory and filing support, quality verification of project installation and other ad-hoc support required to verify contract invoices.

In addition to the various administration and oversight functions described, SDG&E continued using utility staff personnel to ensure the successful delivery of this third-party program. SDG&E delivery functions and Direct Implementation Costs for this new third-party program included the following:

Engineering

- Measure package review and updates
- Measure package development and submittal to ED for approval
- Measure changes
- Design and implementation of quality assurance procedures and analysis of subsequent results
- Ex-Ante reviews
- Data request responses
- Response to Recommendation activities
- California Technical Forum (Cal TF) and DEER support

Evaluation, Measurement and Verification (EM&V)

- Program and project evaluation activities
- Ex-post related discussions, reviews, and Impact evaluations

System Support

- System configuration, testing, and maintenance

Marketing

- Co-branding activities and Statewide marketing discussions
- Marketing and communications support

SDG&E was able to put together and execute a robust quality assurance plan that included phone surveys of participating installation contractors. During the close of the program year, SDG&E identified errors in how the implementer was reporting claims for measures, specifically gas furnace retrofits. The implementer failed to accurately screen for furnaces which were a part of a new construction build, and submitted these claims as retrofit. SDG&E was able to confirm that these were valid claims through its QA/QC process, which included phone surveys to the installation contractor who was able to verify the purchase of the equipment. Based on the results of the surveys, there was insufficient data to distinguish between "retrofit" claims and "new construction." To avoid over-reporting of energy savings, SDG&E has claimed "new construction" for nearly all furnace measures in SW HVAC because the unit energy savings (UES) are less than that of retrofit. SDG&E is only claiming retrofit on those units confirmed as retrofit during inspection conducted prior to this filing. SDG&E is continuing to do verification work to confirm retrofit versus new construction and will compensate the implementer for confirmed retrofit sales/installs.

D. SDGE_SW_PLA- Statewide Plug Load & Appliance

SDG&E is the lead program administrator for the Statewide Plug Load and Appliance program. The advice letter for the program was filed on January 28, 2022. The program is anticipated to launch in 2022.

E. SDGE_SW_PLA_PA- Statewide Plug Load & Appliance (Utility)

SDG&E is the lead administrator for the Statewide Plug-Load and Appliance program, a midstream program that offers rebates on plug-load and appliance deemed measures within the four IOU service territories. The SDGE_SW_PLA_PA program operates as the internal utility general administrative support portion of the SDGE_SW_PLA program. The program will

perform duties consistent with the Commission-approved administrative functions detailed in Advice Letter 3599-3-A/2897-G-A.

F. SDGE_SW_ETP_Gas - SW Emerging Technologies – Gas

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Southern California Gas Company's 2021 Annual Report for the performance for the respective Statewide Program.

G. SDGE_SW_ETP_Gas_PA – SW Emerging Technologies – Gas (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget for the SW Emerging Technologies – Gas Program are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.
- IT overhead related to regulatory budget filings.

Southern California Gas, the SW Lead Program Administrator, officially launched this Program in November 2021. SDG&E was invited to join the Technology Advisory Group (TAG) to assist the Lead PA and their selected Third-Party Implementer in their mission to identify promising gas efficiency technologies and assess their broader impact to California energy efficiency goals. The TAG is an information-sharing conduit for industry stakeholders to identify and discuss issues that should be considered as the program seeks to overcome market barriers and increase adoption of emerging energy efficiency technologies. The TAG is tasked to review and provide and vote to the following key elements of the Program: Annual Research Plan,

Emerging Technologies project proposals to SoCalGas, Technology Priority Map (TPM) based on results of scanning and screening, final project reports.

Prior to the official launch of the Program, SDG&E provided support at the request of the Lead PA in their solicitation and their transition to the Third-Party Implemented Program. These included the following activities:

- Participated in the Statewide Investor Owned Utility Emerging Technologies Program Team.
- Supported and coordinated the various tasks entailed in the transition from the locally implemented Emerging Technologies Program to the SW Program, per direction from the Lead PA.
- Reviewed and commented on the RFA and RFP for the SW Gas ET Implementer solicitation.
- Coordinated with Energy Division on multiple data requests. Most notably is the initiative to revamp the SW ET database update and reporting process. This effort's goal was to eventually streamline and automate the tracking and reporting process for measures originating from completed IOU ET projects and adopted into incentive programs to accurately claim energy and demand savings.
- Reviewed and provided input and recommendations to finalize the Technology Priority Map (TPM) and initial set of proposed Technology Focused Pilots (TFPs).

H. SDGE_SW_MCWH – Statewide Midstream Commercial Water Heating

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Southern California Gas Company 2021 Annual Report for the performance for the respective Statewide Program.

I. SDGE_SW_MCWH_PA – Statewide Midstream Commercial Water Heating (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.
- IT overhead related to regulatory budget filings.

J. SDGE_SW_FS – SW Food Service Point of Sale

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Southern California Gas Company 2021 Annual Report for the performance of the respective Statewide Program.

K. SDGE_SW_FS_PA – SW Food Service Point of Sale (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.
- IT overhead related to regulatory budget filings.

L. SDGE_SW_UL – CA Statewide Lighting Program

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Southern California Edison 2021 Annual Report for the performance for the respective Statewide Program.

M. SDGE_SW_UL_PA – CA Statewide Lighting Program (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.
- IT overhead related to regulatory budget filings.

N. SDGE_SW_IP_Colleges – Statewide Higher Education Program

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Southern California Edison 2021 Annual Report for the performance for the respective Statewide Program.

O. SDGE_SW_IP_Colleges – Statewide Higher Education Program

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to

Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.

- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds

- IT overhead related to regulatory budget filings

P. SDGE_SW_IP_GOV_DGS – Statewide State of California Partnership Program

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Pacific Gas and Electric 2021 Annual Report for the performance for the respective Statewide Program.

Q. SDGE_SW_IP_GOV_DGS_PA – Statewide State of California Partnership Program (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.

- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.

- IT overhead related to regulatory budget filings.

R. SDGE_SW_WP – Water/Wastewater Pumping Program

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program

through the CPUC's CEDARs reporting system. Please refer to the Southern California Edison 2021 Annual Report for the performance for the respective Statewide Program.

S. SDGE_SW_WP_PA – Water/Wastewater Pumping Program (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.
- IT overhead related to regulatory budget filings.

T. SDGE_SW_ETP_Electric – Electric Emerging Technologies Program

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Southern California Gas Company 2021 Annual Report for the performance of the respective Statewide Program.

U. Statewide New Construction Programs

PG&E is responsible for the following Statewide New Construction Programs:

Statewide Non-Residential New Construction	Statewide Residential New Construction
SDGE_SW_NC_NonRes_Ag_electric	SDGE_SW_NC_Res_electric
SDGE_SW_NC_NonRes_Ag_mixed	SDGE_SW_NC_Res_mixed
SDGE_SW_NC_NonRes_Com_electric	
SDGE_SW_NC_NonRes_Com_mixed	
SDGE_SW_NC_NonRes_Ind_electric	
SDGE_SW_NC_NonRes_Ind_mixed	
SDGE_SW_NC_NonRes_Pub_electric	
SDGE_SW_NC_NonRes_Pub_mixed	
SDGE_SW_NC_NonRes_Res_electric	
SDGE_SW_NC_NonRes_Res_mixed	

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Pacific Gas and Electric 2021 Annual Report for the performance of the respective Statewide Program.

V. Statewide New Construction Programs (Utility)

The following Statewide New Construction Programs applicable to this section are:

Statewide Non-Residential New Construction	Statewide Residential New Construction
SDGE_SW_NC_NonRes_Ag_electric_PA	SDGE_SW_NC_Res_electric_PA
SDGE_SW_NC_NonRes_Ag_mixed_PA	SDGE_SW_NC_Res_mixed_PA
SDGE_SW_NC_NonRes_Com_electric_PA	
SDGE_SW_NC_NonRes_Com_mixed_PA	
SDGE_SW_NC_NonRes_Ind_electric_PA	
SDGE_SW_NC_NonRes_Ind_mixed_PA	
SDGE_SW_NC_NonRes_Pub_electric_PA	
SDGE_SW_NC_NonRes_Pub_mixed_PA	
SDGE_SW_NC_NonRes_Res_electric_PA	
SDGE_SW_NC_NonRes_Res_mixed_PA	

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds
- IT overhead related to regulatory budget filings

W. SDGE_SW_WET_CC – Statewide WE&T Career Connections

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Pacific Gas and Electric 2021 Annual Report for the performance for the respective Statewide Program.

X. SDGE_SW_WET_CC_PA – Statewide WE&T Career Connections (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.
- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.
- IT overhead related to regulatory budget filings.

Y. SDGE_SW_WET_Work – Statewide WE&T Career and Workforce Readiness

SDG&E provides funding to the Lead Program Administrators as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives the proportional benefits from the Statewide Program through the CPUC's CEDARs reporting system. Please refer to the Pacific Gas and Electric 2021 Annual Report for the performance of the respective Statewide Program.

Z. SDGE_SW_WET_Work_PA – Statewide WE&T Career and Workforce Readiness (Utility)

SDG&E included an administrative budget for Statewide programs in which SDG&E is not the Lead Program Administrator. Activities and functions that are covered under this budget are as follows:

- Program staff time related to participation in statewide meetings, responding to Lead PA requests, directing customer inquiries, marketing and cobranding approval, analytics as it relates to SDG&E's proportional share of the budget and savings.

- Administration and facilitation of Co-Funding Agreements for each statewide program; monthly accounting activity related to the transfer of funds.

- IT overhead related to regulatory budget filings.

XVII. OTHER ENERGY EFFICIENCY ACTIVITIES AND PROGRAMS

A. SDGE3281 EM&V – Evaluation Measurement and Verification

EM&V activities are designed to 1) inform the program selection process, 2) provide early feedback to program implementers, 3) produce impact evaluations at the end of the funding period, and 4) provide feedback into the planning process for future program cycles.

SDG&E participated in the development of the Statewide EM&V roadmap that outlines the various EM&V projects that the Commission's Energy Division and utilities will manage in 2021. SDG&E either managed or participated in Statewide studies through the various Project Coordinating Groups (PCGs) that support these studies.

In D.16-08-019, the Commission increased the portion of the EM&V budget going to program administrators from 27.5% to a maximum of 40%.[15] "Additional budget beyond the current 27.5 percent earmarked for program administrators, and up to the 40 percent cap allowed herein, should be designated only for the additional activities associated with the change in EM&V priorities and activities articulated in this decision."[16]

Resolution E-5152 also notes that Energy Division "agree[s] with SDG&E that support for CalTF may be considered either program- or evaluation-related, and therefore grant the IOUs the discretion to determine whether to categorize the activity as program implementation funding

[15] D.16-08-019 at 80-81.
[16] *Id.* at 81.

or EM&V for budgeting purposes. "[17] Accordingly, in 2021, SDG&E started to breakout eTRM enhancement costs and charge them to EM&V dollars, where in previous years, eTRM enhancements were 100% allocated to program dollars.

B. Statewide Finance Pilots Program Description

In D.12-11-015, the Commission authorized $75.2 million for 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 was 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 OP7 authorized continued utility pilot support and funding.

In 2017, SDG&E filed Advice Letter 3147-E/2625-G with information on its 2017-2021 annual program budgets. SDG&E's Advice Letter was approved effective January 1, 2018. As a result, these pilots are separate from the 2021 portfolio budget and tracked outside the standard energy efficiency program portfolio budget.

Administration of the pilots is delegated to the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA). These pilots 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 will also

[17] Resolution E-5152 (August 5, 2021) at 26.

include an On-Bill Repayment (OBR) feature. SDG&E provides support for these pilots under the following program categories:

SDGE3264 SW-FIN-New Fin Offerings - CHEEF & Funds Reserved

SDGE3308 SW-Finance ME&O

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

SDGE3325 SW-FIN – Finance Pilots – SDG&E Administration

Implemented Strategies

Throughout the year, SDG&E worked alongside the Statewide finance ME&O administrator, Center for Sustainable Energy, to increase the program's effectiveness and facilitate loan volume by targeting homeowners through local, targeted marketing efforts, such as digital advertising campaigns and paid social media posts.

Additionally, SDG&E continues to work collaboratively with CAEATFA and other program stakeholders on the development of the remaining pilots. Meanwhile, CAEATFA continues to research and develop OBR, which is a key component of the pilot programs, including a future non-residential pilot. In April 2020, the CPUC approved Resolution E-5072, which transitioned the Residential Energy Efficiency Loan Program (REEL) from a pilot to a full-scale program. CAEATFA will continue in its role as the administrator of the REEL in the future.

2021 Program Accomplishments

In 2021, participating lenders funded over 90 projects in SDG&E's service territory, with an approximate combined project cost of over $887,812.

C. California Analysis Tool for Locational Energy Assessment (CATALENA) Project Description (Provided by Lead IOU SCE, modified by SDG&E)

In Decision (D.)18-05-041,[18] the Commission directed the IOU Program Administrators[19] to select a lead to oversee the Statewide deployment of a tool akin to the legacy tool known as "Energy Atlas", which served as a database of building energy consumption that links utility account information to building characteristics, socio-demographic data, and other significant attributes that can be expressed spatially.[20] The public portion of the Energy Atlas is a front-end website that displays spatially aggregated energy consumption statistics at an annual temporal resolution for most neighborhoods, cities, and counties in Southern California (excluding SDG&E territory). The Statewide tool is now referred to as "CATALENA", and IOUs were directed to competitively solicit a third-party to:

- Implement the deployment
- Maintain data quality, consistency and security
- Continue development of the Energy Atlas's capabilities, and
- Encourage and support local governments that choose to participate.

With the concurrence of the other IOUs, SCE is the lead, overseeing the Statewide deployment of the new CATALENA tool. D.18-05-041 also directed the IOU PAs to:

- Allocate up to $2 million to CATALENA, and
- Include annual management and maintenance costs for CATALENA in their annual budget advice letters, in proportion to their relevant energy efficiency (EE) programs.[21]

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[18] D.18-05-041, *Addressing Energy Efficiency Business Plans*, available at https://docs.cpuc.ca.gov/PublishedDocs /Published/G000/M215/K706/215706139.PDF.

[19] Southern California Edison Company (SCE), Pacific Gas & Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Gas Company (SoCalGas).

[20] *Id.* at 189 (OP 32)

[21] *Id*.

The IOUs created a work scope for the CATALENA website and database system that gives users access to aggregated energy use profiles of residential, commercial, industrial, and agricultural customers within the IOUs' service territories. CATALENA may also combine energy use data with other relevant information, potentially including:

- Energy efficiency program deployment
- Electric vehicle and charging station data
- Behind-the-meter solar and storage capacity, and
- Other relevant public data.

CATALENA is anticipated to be capable of displaying data through graphs, charts, and (potentially) an interactive map.

Strategies Implemented in 2021 (Provided by Lead IOU SCE)

In 2021, the IOUs' CATALENA Working Group ("Working Group"), led by SCE, worked with the California Public Utilities Commission's Energy Division (CPUC ED) to determine if the CATALENA work specifications include non-aggregated confidential customer usage data. SCE expressed concerns about this issue multiple times on a call with attorneys from CPUC and SCE. SCE's principal concerns are that:

- It will be challenging and may be impossible to include confidential data in this tool while following our legal obligations to protect customer privacy.
- Including customer confidential data is not needed in order to comply with D.18-05-041 OP 32.

Core Function Activities:

The key CATALENA Working Group goal achieved in 2021 was to reach agreement on the cost-sharing methodology for the ongoing operations and maintenance budget, which includes annual escalation and enhancement costs.

Collaboration with Others:

To advance the development of the work specification, the Working Group held several update calls with the IOUs to apprise them of continued discussion with the CPUC ED on the need to provide disaggregated data to end-users.

Challenges/Changes for 2021 (Provided by SDG&E)

SDG&E believes the primary challenge consists of reaching Statewide consensus on the scope of the CATALENA project, specifically the appropriate level of data collection, so that the RFP can be issued, a vendor can be selected, and the project can be implemented. SDG&E is an active participant in discussions with the IOUs, the CEC, and the CPUC regarding the scope of the CATALENA project. Until stakeholders can reach consensus, the project cannot proceed.

E. Portfolio Operations and Compliance Process Enhancements

In 2021, SDG&E reviewed and made several process improvements to EE program management in order to improve compliance and assure the prudent management of SDG&E's EE portfolio. The following areas underwent significant review.

Audits and Inspections: SDG&E conducted a review of its current programs and implemented changes in its inspection protocols to ensure that current inspection protocols are statistically based, incorporate quality engineering principles, and follow industry-standard practice. In 2022, SDG&E will continue to monitor the statistically based plan to ensure accuracy in project inspections.

New Employee and Contractor Training: SDG&E continued its program administration training program for its staff and for new contractors as they are brought in. The purpose of the training is to elevate program advisor knowledge and implementation of best practices in managing contracts for existing programs, including tracking and managing contract performance indicators and metrics, scopes of work, and other contract elements. This training

was also extended to groups that provide systems, engineering, inspections, policy, and compliance support and will be provided annually.

Invoices: SDG&E continues to strengthen the process for invoice review and payment and integrate any lessons learned and new data, as Third-Party Implementers are brought on. SDG&E has been standardizing across programs to ensure accurate, succinct processes. In order to address issues created by the siloed review of invoices, a formal checklist procedure was developed in 2020, for the review and approval of each invoice, which includes signature requirements of the reviewer and approver, to ensure that appropriate documentation is included with each invoice and that the invoice is accurate and paid in accordance with program, regulatory and company rules. This practice has continued into 2021. Furthermore, SDG&E developed an online training program regarding program requirements for its energy efficiency programs staff at all levels who are responsible for reviewing and approving invoices to ensure internal approval policies and standards are understood and followed. The mandatory training program was launched in early 2021 and is a yearly training requirement.

Onboarding New Vendors and Contractors: SDG&E has continued to enhance its onboarding process for new vendors and contractors, with each new solicitation a more in-depth review of whether such vendors and contractors can contractually, legally, and financially perform under their contracts. This includes conducting credit reviews where appropriate and ensuring that solicitation processes are implemented.

Vendor and Contractor Monitoring: SDG&E has strengthened its monitoring processes to ensure that vendors and contractors comply with regulatory requirements. Processes being followed include regularly scheduled meetings with Implementers and internal customer

program staff to discuss vendor/contractor compliance and internal program compliance, in addition to program performance.

Business Operations Compliance Controls: SDG&E monitors all controls to identify contractor noncompliance discrepancies and initiates a corrective action with the vendor. In conjunction with enforcement of contractor compliance, SDG&E has also examined existing protocols and tools to ensure its own compliance through internal audits. SDG&E launched a comprehensive compliance training course that is required attendance for department personnel on an annual basis. The purpose of the training is to provide initial training for new employees and refresher training for experienced employees on the compliance requirements and procedures for each of our customer programs.

In addition, SDG&E's review of Third-Party invoices and Key Performance Indicators and claims data led to the identification of an issue with the CEDARs reporting system associated with Climate Zones 6 and 8 and their omission within SDG&E territory. This has been brought to the attention of the Energy Division staff to include in the updates for the 2022 filing within CEDARs. The below table outlines the potential differences in reporting had Climate Zone 6 and Climate Zone 8 been able to be claimed by SDG&E instead of classifying those claims as "System."

SDG&E Filing	Electric Benefits	Gas Benefits
Current Filing, Using System for E3 Climate Zone for CZ 6 and 8 in SDGE territory	$456,553.84	-$9,567.83
Using CZ 6 and 8, with SCE as PA to allow ACC to assign benefits	$516,997.04	-$9,343.53

APPENDIX A

ANNUAL REPORT TABLES

Files and Data tables are available online at:

https://www.sdge.com/rates-and-regulations/regulatory-filing/914/energy-efficiency-filings

SECTION 1 - ENERGY SAVINGS

The purpose of the following table (Table 1) is to report the savings achievements of the energy efficiency portfolio of programs implemented by SDG&E for the 2021 program year toward the CPUC Adopted Goals (D.19-08-34). Beginning in 2021, per D.19-08-034, Energy Savings Assistance (ESA) accomplishments do not contribute to IOU goal attainment. The annual impacts are reported for 2021 in terms of annual and lifecycle energy savings in GWh (gigawatt hours), annual and lifecycle natural gas savings in Mth (million therms), and peak demand savings in MW (megawatts). The table shows annual savings that reflect installed savings, not including commitments.

2021 Net First Year Savings, Goal Attainment and Fuel Sub Load Reduction Adjustments

	GWh	MW	MMTherms	GWh	MW	MMTherms
	Portfolio - Non C&S			Codes & Standards		
2021 Total Installed Portfolio Savings	66.8	10	2.4	527.8	89.8	3.6
Adopted Goals (D.19-08-034)(1)	90	17	2.2	150	31	1.5
Percentage of goal attainment	74%	59%	110%	352%	290%	240%
Fuel Substitution Goal Reduction see Tab 2, Table 2B(2)						
Goals less FS Goal Reduction (7-9 not reflected in CEDARS unless requested)(2)						

Notes:

(1) CPUC Adopted Goals and installed savings exclude Energy Savings Assistance (ESA) Program.

(2) SDGE did not have Fuel Substitution claims in 2021.

(3) All energy savings numbers are net with 5% market effects.

SECTION 2 - FUEL SUBSTITUION SAVINGS

The purpose of the following table is to report the annual incremental savings and building infrastructure costs by use category for fuel substitution measures. This table provides for separate accounting of reductions in energy savings goals due to fuel substitution. SDG&E did not have any fuel substitution measures to report in 2021

Fuel Substitution Savings
For more information on Fuel Substitution (FS), please visit: https://www.cpuc.ca.gov/about-cpuc/divisions/energy-division/building-decarbonization/fuel-substitution-in-energy-efficiency

2A. New Fuel Program Administrator Savings [1]

Fuel Substitution Measure Use Category [8]	Energy Savings (MMBTU) [2]	New Fuel Units [3]	New Fuel Savings Conversion [4]		Original Fuel Goals Reduction (PY activities)			Building infrastructure upgrades necessitated by installation of FS measures [7]			FYI
			kWh	Thm	Utility [5]	kWh [6]	Thm [6]	Electric ($)	Gas ($)	Other ($)	CET_ID__UseCategory
Appliance or Plug Load											AppPlug
Building Envelope											BldgEnv
Compressed Air											CompAir
Commercial Refrigeration											ComRefrig
Codes & Standards											C&S
Food Service											FoodServ
HVAC											HVAC
Irrigation											Irrigate
Lighting											Lighting
Non-Savings Measure											NonSav
Process Distribution											ProcDist
Process Drying											ProcDry
Process Heat											ProcHeat
Process Refrigeration											ProcRefrig
Recreation											Recreate
Service											Service
Service and Domestic Hot Water											SHW
Whole Building											WholBldg
TOTAL											

Note: SDGE did not have Fuel Substitution claims in 2021.
[1] Separate accounting of Fuel Substitution claims sponsored by the new-fuel PA submitting these tables.
[2] Claimable net energy savings in MMBTU. This is a calculated energy conversion from columns D:E.
[3] Unit of savings for the new fuel (either kWh or Thm)
[4] Claimable savings for the new fuel (this is not actual grid savings, but the net savings converted to unit of the new fuel). CEDARS CET output fields "First Year Net kWh" and "First Year Net Therm" apply this conversion and should be used in these cells.
[5] The original fuel utility whose goals should be adjusted.
[6] This is the amount that the original fuel utility's goals should be reduced. These are calculated as an energy conversion from the net new fuel savings in columns D:E. Reductions for the original fuel utility goals are to be summarized in Table 2B of the original fuel utility's Annual Reports.
[7] Required for Downstream measures only. See D.19-08-009 OP 4 for more information.
[8] Measure Use Categories listed here are the descriptions that correspond directly to the CET field "CET_ID__UseCategory" (or "UseCategory") codes.

2B. Original Fuel Utility Goals Reduction [9]

Program Administrator Sponsoring New Fuel Measure [10]	Original Fuel Goals Reduction (PY activities) [11]		Original Fuel Goals Reduction True-up (PY-1 activities) [12]		Total PY Goals Reductions	
	kWh	Thm	kWh	Thm	kWh	Thm
PG&E						
SCE						
SDG&E						
SoCalGas						
3C-REN						
BayREN						
I-REN						
MCE						
RuralREN						
SoCalREN						
Total Goal Reduction						

Note: SDGE did not have Fuel Substitution claims in 2021.
[9] Goals reductions for the original fuel utility from all applicable PAs. This table is only populated by utilities whose fuels were the original fuel for a Fuel Substitution Measure to reflect their reduction in goals. Non-IOU PAs or utilities who were not the original fuel leave this table blank.
[10] Name of PA which sponsored fuel substitution measures that affect the reporting utility (as documented in the sponsoring PA's Annual Report).
[11] When feasible, these values should equal the goals reductions listed in corresponding sponsoring PA's Table 2A for the original fuel utility.
[12] True-up values only used if/when the original fuel utilities goals reductions for PY-1 did not equal the sponsoring PA goals reductions for PY-1; see D.19-08-009 OP 7.

D.19-08-009 [impetus for this reporting tab]
COL
23. The original-fuel utility program administrator should receive a reduction in their portfolio energy efficiency goals, calculated as the energy savings achieved in the original fuel due to the fuel substitution measure, to account for the loss of energy efficiency potential when its fuel is substituted.
24. Each program administrator sponsoring a fuel substitution measure, as well as any utility program administrator of the original fuel being substituted, should reflect energy savings (or credit towards goals) associated with fuel substitution measures in its Energy Efficiency Annual Report and Annual Budget Advice Letter filings in a separate accounting from claims of other energy savings.
25. A utility whose fuel is being substituted by a fuel substitution measure should include separate accounting of a reduction in its energy savings goals, with a one-year lag (if necessary), after reflecting the energy savings claims of the new-fuel utility in its Energy Efficiency Annual Report and/or Annual Budget Advice Letter filings.
OP
4. Any energy efficiency program administrator including fuel substitution measures in its portfolio in a downstream program shall track instances of building infrastructure upgrades necessitated by the installation of the fuel substitution measures, and shall include this information in its energy efficiency annual report, in a form agreed upon with Commission staff.
5. Fuel substitution measures and associated program costs shall be funded by the ratepayers of the new fuel, not ratepayers of the fuel being substituted.
6. Each program administrator sponsoring a fuel substitution measure shall reflect energy savings (or credit towards goals) associated with fuel substitution measures in its Energy Efficiency Annual Report and Annual Budget Advice Letter filings in a separate accounting from claims of other energy savings.
7. A utility whose fuel is being substituted by a fuel substitution measure should include separate accounting of reductions in its energy savings goals due to fuel substitution, with a one-year lag (if necessary), after reflecting the energy savings claims of the new-fuel utility in its Energy Efficiency Annual Report and/or Annual Budget Advice Letter filings.

SECTION 3 ENVIRONMENTAL IMPACTS

The purpose of the following table (Table 3) 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 2021 program year. The impacts should be in terms of annual and lifecycle tons of CO2, NOx, and PM10 avoided and should come from the Cost Effectiveness Tool calculator.

Environmental Impacts of EE Portfolio by Measure Use Category

Measure Use Category	Gross annual tons of CO2 avoided	Net annual tons of CO2 avoided	Gross lifecycle tons of CO2 avoided	Net lifecycle tons of CO2 avoided	Gross annual tons of NOx avoided	Net annual tons of NOx avoided	Gross lifecycle tons NOx avoided	Net lifecycle tons NOx avoided	Gross annual tons PM10 avoided	Net annual tons PM10 avoided	Gross lifecycle tons PM10 avoided	Net lifecycle tons PM10 avoided
Appliance or Plug Load	8,596	8,596	90,796	90,795	5,913	5,913	47,381	47,380	2,206	2,206	17,677	17,677
Building Envelope	5,022	5,022	112,200	112,198	1,494	1,494	29,428	29,427	551	551	10,859	10,859
Compressed Air	208	208	3,928	3,928	131	131	1,966	1,966	49	49	733	733
Commercial Refrigeration	8,934	7,987	85,326	79,912	5,489	4,941	45,832	42,882	2,317	2,020	18,309	16,796
Codes & Standards	6,933	6,933	140,879	140,879	4,395	4,395	69,403	69,403	1,640	1,640	25,900	25,900
Food Service	535	348	6,512	4,242	439	286	5,256	3,430	9	6	111	73
HVAC	15,141	14,471	235,819	225,090	7,504	6,769	106,081	94,880	2,224	2,135	30,381	29,218
Irrigation												
Lighting	83,939	83,727	1,637,171	1,635,648	53,864	53,743	824,764	823,995	20,155	20,085	307,774	307,344
Non-Savings Measure												
Process Distribution	3	2	10	6	2	1	6	4	1	1	2	2
Process Drying												
Process Heat	438	396	6,687	6,032	225	149	3,193	2,118	12	9	190	140
Process Refrigeration												
Recreation	1,484	1,415	18,082	17,274	919	876	9,498	9,066	347	329	3,579	3,399
Service												
Service and Domestic Hot Water	23,355	19,539	201,920	178,867	9,634	6,449	59,285	40,189	350	330	3,396	3,197
Whole Building	30,359	31,222	329,342	330,533	20,324	21,085	118,356	119,397	4,681	4,823	39,052	39,241
TOTAL	184,949	179,867	2,868,672	2,825,403	110,331	106,233	1,320,449	1,284,136	34,542	34,185	457,966	454,579

SOURCE: CEDARS CET Outputs
Notes:
(1) All Environmental Impacts are net with 5% market effects.
(2) Excludes Energy Savings Assistance (ESA) Program.

SECTION 4 - EXPENDITURES

The purpose of Table 4 is to report the annual costs expended by SDG&E in implementing the 2021 Energy Efficiency portfolio of programs. The report shows the "Total EE Portfolio Expenditures" broken out into the Administrative Costs, Marketing/Advertising/Outreach Costs, Direct Implementation Costs, and Evaluation, Measurement and Verification (EM&V) Cost categories. This table also includes budget and expenditure dollars for SW ME&O and On-Bill Financing Programs/Pilots.

2021 Expenditures (Including Expenditures on Past Cycle Commitments paid in 2021)

IOU	Program ID	Program Name (include all programs)	Program Implementer	Primary Sector	Program Category	Delivery Channel	Authorized/Forecast Budget: 2021 Approved Budget	Authorized/Forecast Budget: 2021 Administrative Cost (forecast as per budget Advice Letter)	Administrative – Non-IOU Implementer: 2021 Expenditures from pre-2021 budgets [3]	Administrative – Non-IOU Implementer: 2021 Expenditures from 2021 Budget [3]	Administrative – IOU: 2021 Expenditures from pre-2021 budgets [3]	Administrative – IOU: 2021 Expenditures from 2021 Budget [3]	Direct Implementation – Non-Incentive: 2021 Expenditures from pre-2021 budgets [3]	Direct Implementation – Non-Incentive: 2021 Expenditures from 2021 Budget [3]	Direct Implementation – Incentives & Rebates: 2021 Expenditures from pre-2021 budgets [3]	Direct Implementation – Incentives & Rebates: 2021 Expenditures from 2021 Budget [3]	PA Administered ME&O: 2021 Expenditures from pre-2021 budgets [3]	PA Administered ME&O: 2021 Expenditures from 2021 Budget [3]	SW ME&O	EM&V: 2021 Expenditures from pre-2021 budgets [3]	EM&V: 2021 Expenditures from 2021 Budget [3]	On Bill Financing Loan Pool
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Notes:
[1] Programs without a delivery mechanism are non-resource programs.
[2] Water Energy Nexus are reported but do not count towards EE savings targets/achievements.
[3] Committed Funds Expenditures are excluded in the amount reported in the columns "2021 Expenditures from 2021 Budget".
[4] All Financing pilot revenues and associated SDG&E IT and admin costs are part of the 2013-2014 revenue cycle.
[5] Energy Savings Assistance program expenditures are included here for disclosure purposes, but are not attributable to the Admin, Marketing & Direct Implementation categories. As such, the ESA program expenditures total has been included in the SW ME&O column and do not represent additional SW ME&O.
[6] As noted in the 2021 EE Annual Report narrative, during the program quality assurance process, SDG&E determined it was necessary to adjust claims that were submitted by the Third Party as "retrofit" to "new construction". SDG&E is continuing to do verification work to confirm retrofit versus new construction and will compensate the implementer for confirmed retrofit sales/installs. If applicable, an additional SW True-up calculation will be completed and partner IOUs will be issued additional refunds.
[7] The expenditures recorded in April 2022 related to the 2021 program cycle (as summarized in the table below) were not included in the 'Total EE Portfolio Expenditures' (above) of Table 4 of the 2021 EE Annual Report due to the timing for the preparation of the annual report.
SDGE analyzed the impact of excluding these expenditures in T-11 Catch Target and determined that the impact was deemed not material.

	Admin	Mktg	DI	Grand Total	Notes
TOTAL	$28,449.38 O	$11,795.37 U	$80,176.01 U	$59,822.00 U	

"O" - Over Reported Expenditures
"U" - Under Reported Expenditures

[8] The values presented for SW Water Heating and SW Foodservice programs agree to the SW Year end true up report provided by the lead IOU, SoCalGas, on April 1, 2022. The values do not agree to the system allocated expenditures from the SW CEDARS module due to SoCalGas uploading data to CEDARS that SoCalGas later determined was incomplete. SoCalGas communicated this to all partner IOUs on May 26, 2022 via email.

SECTION 5 PROGRAMS

The purpose of the following table (Table 5) is to provide program level energy savings metrics and data alongside program level expenditures.

EE Programs

Program Name	SW Lead PA	Program ID	Budget	Expenditures [3]	TRC	PAC	Net GWh First Year	Net GWh Life Cycle	Net MW First Year*	Net MM Therms First Year	Net MM Therms Life Cycle	Gross GWh First Year	Gross GWh Life Cycle	Gross MW First Year*	Gross MM Therms First Year	Gross MM Therms Life Cycle
IOU/PA Programs - Local			**30,153,120**	**19,484,172**	**0.44**	**0.50**	**53.03**	**117.92**	**7.39**	**1.28**	**3.65**	**52.70**	**136.94**	**7.28**	**1.27**	**4.21**
SW-CALS-Energy Advisor-HEES, UA1	SDGE	SDGE3201	496,213	493,658	-	-										
SW-CALS-Plug Load and Appliances-POS	SDGE	SDGE3204	1,518,172	1,261,134	0.63	0.74	0.91	9.07	0.07	0.01	0.14	1.51	15.12	0.12	0.02	0.23
SW-CALS - EUC WHRP - Advanced	SDGE	SDGE3209		-												
SW-CALS - CAHP/ESMH-CA Advanced H	SDGE	SDGE3213		-												
SW-COM-Customer Services- Audits NonR	SDGE	SDGE3217	106,768	138,056	-	-										
SW-COM-Calculated Incentives-Calculated	SDGE	SDGE3220	1,971,875	926,486	0.30	0.72	1.82	7.07	-	0.06	0.18	1.99	8.45	-	0.06	0.17
SW-COM-Calculated Incentives-Savings by	SDGE	SDGE3222	2,417,259	324,725	1.54	3.66	1.47	20.88	0.22	0.03	0.46	1.84	26.16	0.27	0.04	0.59
SW-COM-Deemed Incentives-Commercial	SDGE	SDGE3223	695,836	368,968	0.26	0.30	0.27	1.45	0.04	(0.00)	(0.01)	0.34	1.82	0.05	(0.00)	(0.01)
SW-COM Direct Install	SDGE	SDGE3226	2,243,210	1,450,980	0.18	0.18	0.65	3.26	0.11	0.00	0.01	0.74	3.68	0.13	0.00	0.01
SW-IND-Strategic Energy Management	SDGE	SDGE3227	911,419	634,600	1.65	1.66	2.35	11.75	0.30	0.03	0.16	2.24	11.19	0.29	0.03	0.15
SW-IND-Customer Services-Audits NonRe	SDGE	SDGE3229	407,913	308,766	-	-										
SW-IND-Calculated Incentives-Calculated	SDGE	SDGE3231	1,182,823	308,326	1.68	6.21	1.00	15.06	0.14	0.06	0.83	1.54	23.18	0.22	0.09	1.27
SW-IND-Deemed Incentives	SDGE	SDGE3233	256,824	356,842	0.14	0.13	0.11	0.60	0.02	(0.00)	(0.00)	0.16	0.87	0.02	(0.00)	(0.00)
SW-AG-Customer Services-Audits	SDGE	SDGE3236	164,729	52,210	-	-										
SW-AG-Calculated Incentives-Calculated	SDGE	SDGE3237	135,221	82,148	0.02	0.02	0.01	0.02	0.00	-	-	0.01	0.04	0.00	-	-
SW-AG-Deemed Incentives	SDGE	SDGE3239	155,901	92,640	-	-										
SW-ET-Technology Introduction Support	SDGE	SDGE3246	450,075	254,891	-	-										
SW-ET-Technology Assessment Support	SDGE	SDGE3247	718,529	568,736	-	-										
SW-ET-Technology Deployment Support	SDGE	SDGE3248	245,647	212,419	-	-										
SW C&S - Compliance Enhancement	SDGE	SDGE3251	510,522	534,243	-	-										
SW C&S - Reach Codes	SDGE	SDGE3252	267,956	291,340	-	-										
SW C&S - Planning Coordination	SDGE	SDGE3253	218,323	214,946	-	-										
SW-WE&T-Centergies	SDGE	SDGE3254	4,101,177	3,353,126	-	-										
SW-WE&T-Connections	SDGE	SDGE3255	371,675	369,443	-	-										
Local-IDSM-ME&O-Local Marketing (EE)	SDGE	SDGE3260	626,761	276,332	-	-										
Local-IDSM-ME&O-Behavioral Programs (	SDGE	SDGE3261	3,647,758	3,524,481	1.38	1.38	42.28	42.28	6.37	0.68	0.68	40.27	40.27	6.07	0.65	0.65
SW-FIN-On-Bill Finance	SDGE	SDGE3262	437,137	220,621	-	-										
3P-IDEEA	SDGE	SDGE3280	4,163,991	1,977,326	-	-										
SW-Com-Customer Services-Pump Test Se	SDGE	SDGE3292		-												
HOPPs - Building Retro-Commissioning	SDGE	SDGE3317	897,608	657,406	2.41	2.46	2.16	6.47	0.12	0.40	1.20	2.05	6.16	0.11	0.38	1.15
STREAMLINED AG EFFICIENCY (SAE)	SDGE	SDGE3322	831,800	229,323	-	-										
SW Programs - PA Allocations only			**11,698,991**	**4,754,609**	**4.27**	**133.78**	**529.23**	**7,774.90**	**90.35**	**3.72**	**56.66**	**529.84**	**7,783.89**	**90.61**	**3.78**	**57.57**
SW Codes & Standards Advocacy - Nationa	PG&E	SDGE_SW_CSA_Natl	498,467	681,653	2.84	133.12	92.43	1,150.51	17.24	0.33	4.65	92.43	1,150.51	17.24	0.33	4.65
SW Codes & Standards Advocacy - State A	PG&E	SDGE_SW_CSA_Appl	552,762	418,642	17.31	749.29	276.12	4,067.32	32.49	1.26	13.76	276.12	4,067.32	32.49	1.26	13.76
SW Codes & Standards Advocacy - State B	PG&E	SDGE_SW_CSA_Bldg	785,210	686,648	2.48	348.16	159.24	2,536.11	40.04	2.03	36.59	159.24	2,536.11	40.04	2.03	36.59
SW Codes & Standards Advocacy - Nationa	SDGE	SDGE_SW_CSA_Natl_PA	48,985	31,167												
SW Codes & Standards Advocacy - State A	SDGE	SDGE_SW_CSA_Appl_PA	50,407	31,807												
SW Codes & Standards Advocacy - State B	SDGE	SDGE_SW_CSA_Bldg_PA	67,584	41,902												
SW State of CA Partnership		SDGE_SW_IP_Gov	58,167	28,914												
SW State of CA Partnership (Utility)		SDGE_SW_IP_Gov_PA	25,237	-												
SW CA Department of Corrections Partnership (Utility)		SDGE_SW_IP_Gov_DoC_PA	25,237	-												
SW New Construction Residential - Mixed Fuel		SDGE_SW_NC_RES_MIXED	279,200	83,271												
SW New Construction Residential - Mixed Fuel (Utility)		SDGE_SW_NC_RES_MIXED_PA	24,104	-												
SW New Construction Residential - All Electric		SDGE_SW_NC_RES_ELECTRIC	738,763	101,835												
SW New Construction Residential - All Electric (Utility)		SDGE_SW_NC_RES_ELECTRIC_PA	39,361	-												
SW Midstream Commercial Water Heating [8]		SDGE_SW_MCWH [8]	1,319,483	287,196	1.48	1.72	(0.01)	(0.13)	(0.00)	0.02	0.46	(0.01)	(0.20)	(0.00)	0.04	0.70
SW Midstream Commercial Water Heating (Utility)		SDGE_SW_MCWH_PA	25,827	386												
SW Foodservice Point of Sale Program [8]		SDGE_SW_FS [8]	1,277,862	799,274	0.71	0.81	0.17	1.97	0.03	0.05	0.56	0.25	3.01	0.05	0.07	0.86
SW Foodservice Point of Sale Program (Utility)		SDGE_SW_FS_PA	49,148	386												
SW Lighting Program		SDGE_SW_UL	1,160,651	134,936	0.38	0.49	0.07	0.83	0.01	(0.00)	(0.00)	0.08	0.87	0.01	(0.00)	(0.00)
SW Lighting Program (Utility)		SDGE SW UL PA	75,117	386												
SW Upstream HVAC Program [6]		SDGE_SW_HVAC_Up [6]	1,453,686	866,326	0.92	2.82	1.21	18.28	0.54	0.03	0.65	1.73	26.27	0.77	0.05	1.02
SW Upstream HVAC Program (Utility)		SDGE SW HVAC Up PA	778,407	464,917												
SW Plug Load and Appliances		SDGE_SW_PLA	1,012,110	-												
SW Plug Load and Appliances (Utility)		SDGE_SW_PLA_PA	886,465	18,238												
WET Career Connections		SDGE_SW_WET_CC	81,433	11,866												
WET Career Connections (Utility)		SDGE_SW_WET_CC_PA	25,237	-												
SW WE&T Career & Workforce Readiness (CWR)		SDGE_SW_WET_Work	172,034	56,098												
SW WE&T Career & Workforce Readiness (CWR) (Utility)		SDGE_SW_WET_Work_PA	25,237	-												
SW Emerging Technologies - Gas		SDGE_SW_ETP_Gas	136,300	8,762												
SW Emerging Technologies - Gas (Utility)		SDGE_SW_ETP_Gas_PA	26,321	-												
Local Government Partnership Programs			**802,426**	**549,481**	-	-	-	-	-	-	-	-	-	-	-	-
LInstP-CA Department of Corrections Partn	SDGE	SDGE3266	92,489	48,266												
LInstP-California Community College Partn	SDGE	SDGE3267	146,800	110,905												
LInstP-UC/CSU/IOU Partnership	SDGE	SDGE3268	242,877	241,467												
LInstP-State of California /IOU	SDGE	SDGE3269	128,857	48,228												
LInstP-University of San Diego Partnership	SDGE	SDGE3270	28,226	11,123												
LInstP-San Diego County Water Authority P	SDGE	SDGE3271	-	-												
LGP- City of Chula Vista Partnership	SDGE	SDGE3272	28,226	14,827												
LGP- City of San Diego Partnership	SDGE	SDGE3273	28,226	15,518												
LGP- County of San Diego Partnership	SDGE	SDGE3274	28,226	22,187												
LGP- Port of San Diego Partnership	SDGE	SDGE3275	28,226	15,125												
LGP- SANDAG Partnership	SDGE	SDGE3276	28,226	15,371												
LGP- Emerging Cities Partnership	SDGE	SDGE3278	22,052	6,463												
Third Party Implemented/Solicited Program			**36,065,693**	**10,560,493**	**2.66**	**2.93**	**12.37**	**66.12**	**2.06**	**1.04**	**5.72**	**18.22**	**95.82**	**2.98**	**1.63**	**9.10**
Single Family Program	SDGE	SDGE4001	1,793,415	-												
Multi Family Program	SDGE	SDGE4002	5,345,438	5,588,083	1.14	1.19	1.30	8.35	0.52	1.09	5.89	1.86	11.45	0.72	1.71	9.35
COMM.SMALL CUST. SRV.(<20KW)	SDGE	SDGE4003	10,714,191	765,295	0.81	0.85	1.64	8.50	0.27	(0.01)	(0.03)	2.14	11.08	0.35	(0.01)	(0.04)
COMM.LARGE CUST. SRV.S(>20KW)	SDGE	SDGE4004	16,212,471	4,017,956	0.71	0.90	9.43	49.27	1.27	(0.05)	(0.14)	14.22	73.30	1.91	(0.08)	(0.22)
K-12 Customer Services Program	SDGE	SDGE4011	764,849	65,168												
Federal Customer Services Program	SDGE	SDGE4012	1,235,329	123,992												
Programs Subtotal			**78,720,231**	**35,348,755**												
EM&V - IOU	SDGE	SDGE3281	902,005	485,105												
EM&V - Other			-	-												
EM&V - CPUC	SDGE	SDGE3281	2,378,007	243,932												
OBF Loan Pool	SDGE															
Total EE Portfolio Expenditures			**82,000,240**	**36,077,792**	**3.48**	**16.07**	**594.63**	**7,958.94**	**99.80**	**6.04**	**66.03**	**600.76**	**8,016.65**	**100.87**	**6.68**	**70.88**
SW ME&O (Energy Efficiency portion only)	SDGE	SDGE3259	3,038,435	2,269,064.19												
RENs/CCAs Passthrough funding (IOUs only)																
Energy Savings Assistance Program (ESA) [5]	SDGE	SDGE-ESAP	-	15,837,309.00			1.76	15.89	0.26	0.05	0.40	1.67	15.13	0.25	0.04	0.38
Water Energy Nexus [2]																
Finance Pilots [4]	SDGE	various		-												

Notes:
[1] Net energy savings numbers include 5% market effects.
[2] Water Energy Nexus are reported but do not count towards EE savings targets/achievements and does not qualify for ESPI
[3] Committed Funds Expenditures are excluded from the amount reported in the columns "Expenditures"
[4] All Financing pilot programs and associated SDG&E IT and admin costs are part of the 2013-2014 program cycle. They do not qualify for ESPI.
[5] Energy Savings Assistance program expenditures are included here for disclosure purposes, but are not attributable to the Admin, Marketing & Direct Implementation categories. As such, the program expenditures total has been included.
[6] As noted in the 2021 EE Annual Report narrative, during the program quality assurance process, SDG&E determined it was necessary to adjust claims that were submitted by the Third Party as "retrofit" to "new construction". SDG&E is continuing to do verification work to confirm retrofit versus new construction and will compensate the implementer for confirmed retrofit sales/installs. If applicable, an additional SW True-up calculation will be completed and partner IOUs will be issued additional refunds.
[8] The values presented for SW Water Heating and SW Foodservice programs agree to the SW Year end true-up report provided by the lead IOU, SoCalGas, on April 1, 2022. The values do not agree to the system allocated expenditures from the SW CEDARS module due to SoCalGas uploading data to CEDARS that it later determined was incomplete. SoCalGas communicated this to all partner IOUs on May 26, 2022 via email.

SECTION 6 - COST EFFECTIVENESS

The purpose of the following table (Table 6) is to provide an annual update on the cost effectiveness of the energy efficiency portfolio of programs being implemented in the 2021 program year.

Cost Effectiveness (Net)

Annual Results	Total Cost ($) to Ratepayers (TRC)	Total Savings ($) to Ratepayers (TRC/PAC)	Net Benefits ($) to Ratepayers (TRC)	TRC Ratio	Total PAC Cost	PAC Ratio	PAC Cost ($/kW) (1)	PAC Cost ($/kWh)	PAC Cost ($/therm)
Total Portfolio w/o C&S	$ 46,395,424	$ 27,317,461	$ (19,077,963)	0.59	$ 39,955,190	0.68		$0.23	$0.48
TOTAL Portfolio with C&S	**$192,797,740**	**$670,802,643**	**$478,004,903**	**3.48**	**$ 41,742,133**	**16.07**		**$0.01**	**$0.10**

(1) The adopted avoided cost methodology does not provide information to provide a meaningful value for PAC Cost per kw.

SECTION 7 - RATEPAYER IMPACTS

The purpose of the following table (Table 7) 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.

Average Billpayer Impacts from Net Savings

2021	Electric Average Rate (Res and Non-Res[1]) $/kwh	Gas Average Rate (Core and Non-Core) $/therm	Average First Year Bill Savings ($) [2]	Average Lifecylce Bill Savings ($) [2]
SDG&E Average	$0.27	$1.19	$169,058,973	$2,245,142,237

1 Non-Residential is a composite based on Small Commercial, Medium/Large Commercial & Industrial, Agriculture, and Streetlighting classes

2 Excludes Energy Savings Assistance (ESA) program savings.

SECTION 8 - SAVINGS BY END-USE

The purpose of the following table (Table 8) is to show annual portfolio savings by end-use category, including those savings attributable to the Codes and Standards pre-2021 advocacy work.

Annual Savings By Use Category 2021

			Gross GWh		Gross MW	Gross MM Therms		Net GWh		Net MW	Net MM Therms	
Measure End Use Category	TRC	PAC	First Year	Life Cycle	First Year	First Year	Life Cycle	First Year	Life Cycle	First Year	First Year	Life Cycle
Appliance or Plug Load	2.17	203.34	38.68	309.84	6.54	(0.13)	0.56	38.68	309.83	6.54	(0.13)	0.56
Building Envelope	2.08	342.31	9.59	187.05	4.63	0.43	8.65	9.59	187.04	4.63	0.43	8.65
Compressed Air	2.35	354.48	0.85	12.79	-	-	-	0.85	12.79	-	-	-
Commercial Refrigeration	2.52	5.02	40.86	325.79	5.36	(0.10)	(0.45)	35.84	300.19	4.71	(0.07)	(0.33)
Codes & Standards	3.61	150.53	28.75	454.09	4.34	(0.00)	(0.00)	28.75	454.09	4.34	(0.00)	(0.00)
Food Service	0.74	0.85	0.24	2.89	0.05	0.08	0.99	0.17	2.03	0.04	0.05	0.65
HVAC	2.61	21.27	38.32	523.84	16.14	0.91	12.77	36.80	503.66	15.61	0.86	11.89
Irrigation												
Lighting	8.37	101.91	352.88	5,392.00	40.28	(0.34)	(4.20)	351.73	5,384.67	40.12	(0.33)	(4.17)
Non-Savings Measure												
Process Distribution	0.02	0.02	0.01	0.04	0.00	-	-	0.01	0.02	0.00	-	-
Process Drying												
Process Heat	5.61	22.32	0.20	3.07	-	0.07	0.98	0.15	2.26	-	0.06	0.91
Process Refrigeration												
Recreation	2.60	9.40	6.36	65.63	1.21	0.00	0.02	6.07	62.77	1.21	0.00	0.02
Service												
Service and Domestic Hot Water	2.69	7.81	6.06	58.81	0.82	3.75	31.70	5.74	55.69	0.77	3.11	27.90
Whole Building	1.61	13.46	77.95	680.82	21.50	2.01	19.87	80.24	683.89	21.82	2.06	19.95
Total	3.48	16.07	600.76	8,016.65	100.87	6.68	70.88	594.63	7,958.94	99.8	6.04	66.03

Notes:
(1) Excludes Energy Savings Assistance (ESA) program savings.
(2) For the Codes & Standards programs, savings that do not have a standard Use Category appear in the Use Category "Codes & Standards".
(3) Net energy savings numbers include 5% market effects.

SECTION 9 - COMMITMENTS

The purpose of the following table (Table 9) is to allow the utilities to report commitments (contractual or incentive) that will produce savings after December 2021. This information will be useful for the Commission's resource planning purposes by enabling program activities to be linked to a particular funding cycle.

Commitments

Commitments Made in the Past with Expected Implementation after December 2010-2012				
	Committed Funds	Expected Energy Savings		
2010-2012	$	GWH	MW	MMth
Resource		-	-	-
Non-Resource		-	-	-
Codes & Standards		-	-	-
SDG&E Total		-	-	-

Commitments Made in the Past Year with Expected Implementation after December 2013-2015				
	Committed Funds [2]	Expected Energy Savings		
2013-2015[2,4]	$	GWH	MW	MMth
Resource	$ -	-	-	-
Non-Resource	$ 5,878,974	-	-	-
Codes & Standards	$ -	-	-	-
SDG&E Total	$ 5,878,974	-	-	-

Commitments Made in the Past Year with Expected Implementation after December 2016

	Committed Funds [3]	Expected Energy Savings		
2016 [3]	$	GWH	MW	MMth
Resource	$ -	-	-	-
Non-Resource	$ 2,198,713	-	-	-
Codes & Standards	$ -	-	-	-
SDG&E Total	$ 2,198,713	-	-	-

Commitments Made in the Past Year with Expected Implementation after December 2017

	Committed Funds [3]	Expected Energy Savings		
2017 [3]	$	GWH	MW	MMth
Resource	$ 136,261	-	-	-
Non-Resource	$ 647,092	-	-	-
Codes & Standards	$ -	-	-	-
SDG&E Total	$ 783,353	-	-	-

Commitments Made in the Past Year with Expected Implementation after December 2018

	Committed Funds [3]	Expected Energy Savings		
2018 [3]	$	GWH	MW	MMth
Resource	$ 40,487	-	-	-
Non-Resource	$ 1,429,037	-	-	-
Codes & Standards	$ -	-	-	-
SDG&E Total	$ 1,469,524	-	-	-

Commitments Made in the Past Year with Expected Implementation after December 2019

	Committed Funds [3]	Expected Energy Savings		
2019 [3]	$	GWH	MW	MMth
Resource	$ 559,407	-	-	-
Non-Resource	$ 2,978,316	-	-	-
Codes & Standards	$ -	-	-	-
SDG&E Total	$ 3,537,723	-	-	-

Commitments Made in the Past Year with Expected Implementation after December 2020

	Committed Funds [3]	Expected Energy Savings		
2020 [3]	$	GWH	MW	MMth
Resource	$ 837,134	-	-	-
Non-Resource	$ 3,130,204	-	-	-
Codes & Standards	$ -	-	-	-
SDG&E Total	$ 3,967,337	-	-	-

Commitments Made in the Past Year with Expected Implementation after December 2021

	Committed Funds [3]	Expected Energy Savings		
2021 [3]	$	GWH	MW	MMth
Resource	$ -	-	-	-
Non-Resource	$ 2,550,972	-	-	-
Codes & Standards	$ -	-	-	-
SDG&E Total	$ 2,550,972	-	-	-

[1] **Note: Committed funds were associated with the 2010-2012 program cycle. These funds were reserved or encumbered for future work permitted per Ordering Paragraph 13 and Conclusion of Law 12 of D.12-11-015.**

[2] **Note: Committed funds are associated with the 2013-2015 program cycle. These funds are reserved or encumbered for future work permitted per the EESTATS CPUC Guidance Document and EE decision (D.15-10-025).**

[3] **Note: Committed funds are associated with the 2016-2021 program years, respectively. These funds are reserved or encumbered for future work permitted per the EESTATS CPUC Guidance Document and EE decision (D.15-10-025).**

4 The amounts reported in Committed Funds include SDG&E's Energy Efficiency Finance Pilots remaining balance from unspent funds 2013-2017, 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 2021 cycle is $3,469,490.

SECTION 10 - SHAREHOLDER PERFORMANCE INCENTIVES

The purpose of the following table (Table 10) is to report SDG&E's forecasted and actual efficiency savings and performance incentives.

Shareholder Incentives (ESPI)

Program Year	2017	2018	2019	2020	2017-2020 Adjusted
Forecast	$4,500,000	$4,500,000	$3,500,000	$3,372,986	$15,872,986
Awards per Resolution	$5,167,682	$3,314,957	$1,311,641	N/A	$9,794,280
Adjusted Awards					$3,632,280

*** For 2019 and 2020, please refer to D.20-11-013 at p. 34 and FOF 32.**

**** For the Program Years 2017 -2019, D.21-09-002 OP 2(b) approves the proposed settlement agreement, which refunds $6.162 million to ratepayers for awards SDG&E received, or was due to receive, as part of ESPI.**

Program Year	**Part 1**	**Part 2**
2017	E-5007	E-5062
2018	E-5062	E-5108
2019	E-5108	N/A
2020	N/A	N/A
2021	N/A	N/A

SECTION 11 - CAP & TARGET

The purpose of the following table (Table 11) is to show the annual Cap & Target performance of the energy efficiency portfolio by budget category (Administrative, Marketing & Outreach, Direct Implementation, and EM&V) as defined in D.09-09-047 and clarified in D.12-11-015.

2021 Energy Efficiency Quarterly Cap And Target Expenditure Performance

Energy Efficiency Cap and Target Expenditure Report

		Expenditures				Cap & Target Performance		
Line	Budget Category	Non-Third-Party Qualifying Costs (Including PA costs and old-definition 3P/GP contracts that don't meet the new definition)	Third-Party Qualifying Costs [4] (Including SW)	Total Portfolio	One-Year Authorized IOU Budget	Percent of Budget	Cap %	Target %
1	**Administrative Costs**							
2	IOU [1]	$ 1,020,909	$ -	$ 1,020,909		2.1%	10.0%	
3	Third Party & Partnership [2]	$ 226,826	$ 499,350	$ 726,176		0.9%		10.0%
4	Target Exempt IOU Programs [3]	$ 2,192,381	$ -	$ 2,192,381				
5	**Marketing and Outreach Costs**							
6	Marketing & Outreach [4]	$ 757,540	$ 318,956	$ 1,076,496		1.3%		6.0%
7	Statewide Marketing & Outreach [5]	$ 2,269,064	$ -	$ 2,269,064	$ 3,038,433			
8	**Direct Implementation Costs**							
9	Direct Implementation (Incentives and Rebates)	$ 1,187,134	$ 2,110,970	$ 3,298,104				
10	Direct Implementation (Non Incentives and Non Rebates) [6]	$ 4,842,620	$ 8,935,076	$ 13,777,697		16.2%		20.0%
11	Direct Implementation Target Exempt Programs [3]	$ 10,593,314	$ 1,863,669	$ 12,456,983				
12	EM&V Costs (Investor Owned Utilities & Energy Division) [6]	$ 729,038	$ -	$ 729,038	$ 3,200,010	0.9%	4.0%	
13	Total [9]	$ 24,018,826	$ 13,728,022	$ 38,346,956	$ 82,000,240	46.8%		
14	2021 Authorized Budget [7]	$ 42,416,806	$ 42,621,867	$ 85,038,673				
15	Third-Party Implementer Contracts (as defined per D.16-08-019, OP 10) [8]	$ -	$ 13,728,022	$ 13,728,022				

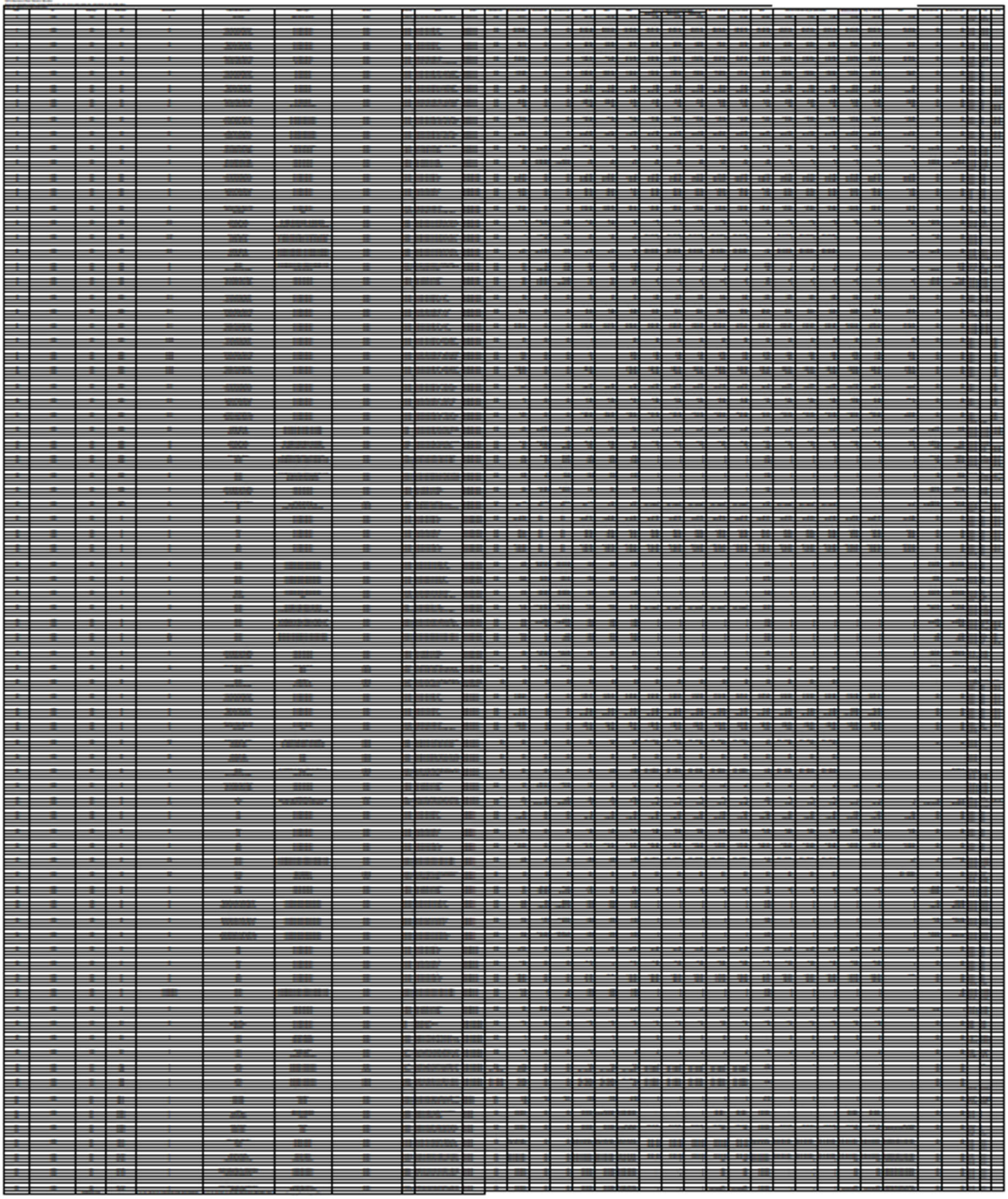
Notes

1. IOU administrative costs (excluding non-IOU third party and/or government partnership programs, and target exempt programs) are limited to 10 percent of total EE budgets based on D. 09-09-047.
2. New Third party program definition per D.16-08-019, OP 10. For Row 3 of this table, the "Non-IOU, Third Party & Partnership" administrative costs under the "Non-Third Party Qualifying Costs" column are non-IOU costs for programs
3. Target Exempt Programs include: Codes & Standards, Emerging Technologies, Workforce Education & Training, Integrated Demand Side Management, CALSPREE Energy Advisor, Customer Service-Audit, Financing, and all non-resource Local, Government Partnership, and Third-Party programs. In 2020, LGP's were reclassed as non-resource programs and are therefore exempt programs per Advice Letter 3429-E-A Page 7.
4. Marketing and Outreach costs are limited to 6 percent of total EE budgets based on D. 09-09-047. Statewide Marketing & Outreach (SW ME&O) is excluded from the Marketing and Outreach cost target calculation per D.13-12-038, at p. 82.
5. SW ME&O budgets for October 2019 through 2021 were requested in Advice Letter 4096-G/5544-E and supplements. The amount in Line 7 represents the portion allocated to EE.
6. EM&V costs include both SDG&E's & Energy Division's EM&V budgets. EM&V budget is limited 4 percent of the total portfolio budget which excludes SW ME&O budget of $3,038,433
7. SDG&E's 2021 Authorized Budget of $85,038,673 includes SW ME&O budget of $3,038,433. As directed in the Energy Efficiency Policy Manual Version 6 March 2020, appendix F, this total includes SW ME&O and excludes BayREN, MCE, and 3C-REN budgets and is the denominator used to calculate the Admin, Marketing, and Direct Implementation Non-Incentive Cap & Target percentages.
8. SDG&E's Third-Party Implementer Contracts (as defined per D.16-08-019, OP 10) includes both SDG&E local and Statewide third-party contracts.
9. Expenditures presented as Direct Implementation (Non Incentive and Non Rebates) will not agree to CEDARS values due to the values presented for SW Water Heating and SW Foodservice programs agree to the SW Year end true-up report provided by the lead IOU, SoCalGas, on April 1, 2022. The SW Water Heating and SW Foodservice values do not agree to the system allocated expenditures from the SW CEDARS module due to SoCalGas uploading data to CEDARS that it later determined was incomplete. SoCalGas communicated this to all partner IOUs on May 26, 2022 via email.

SECTION 12 - METRICS TABLE

The purpose of the following table (Table 12) is to show portfolio savings for numerous key elements based on the activity of the EE portfolio and the service territory customer population.

2023 Sacramento River Delivery Allocation



SECTION 13 - LOCAL PROGRAM THIRD-PARTY BUDGETS

The Purpose of Table 13 is to demonstrate SDG&E's Third-Party Program solicitations compliance with the following Ordering Paragraphs (OP) of Commission D.18-01-004:

OP 1: Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, and Southern California Gas Company shall ensure that their energy efficiency portfolios contain third-party designed and implemented programs with the following minimum percentages by the dates given:

a. At least 25 percent by December 31, 2018. For 2018 only, the percentage requirement may also include Third-Party programs under the definition of third-party previously in place prior to the adoption of Decision 16-08-019.

b. At least 40 percent by December 31, 2021.

c. At least 60 percent by December 31, 2022.

OP 8: Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, and Southern California Gas Company shall include in their energy efficiency annual reports, beginning with the 2018 reports, a listing of all Third-Party contracts in place, along with at least the following information (with confidential versions, if necessary).

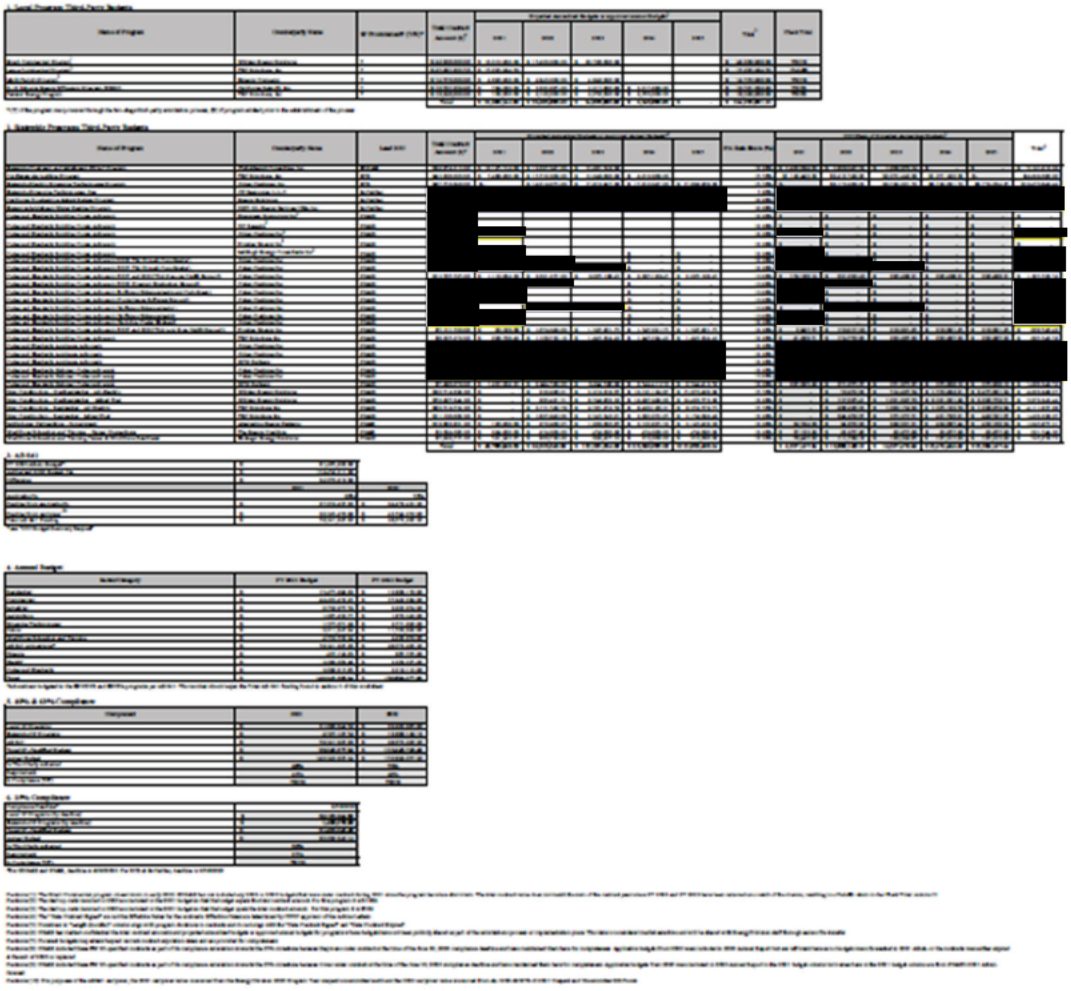
a. Name of counterparty

b. Length

c. Dollar value (aggregated, if necessary, for public versions)

d. Market segment, sub-segment, sizes, and types of customers addressed

In addition, consistent with Public Utilities Code Section 1613, Table 13 demonstrates SDG&E's compliance with D.18-01-004 OP 1 by incorporating the authorized AB 841 programs budget which are considered qualifying Third-Party programs as defined by D.16-08-019.



SECTION 14 - PG&E's MARKETPLACE METRICS

This table is not applicable to SDG&E. It is not included in the SDG&E annual report.

APPENDIX B

2021 Statewide HVAC True-up Tables

Section 1 Final True-up Report

The purpose of the following table is to show the Annual True-up Report submitted to each funding IOU following a program year and included in the program year Annual Report, as required by the co-funding agreement (CFA). The Annual True-Up Report outlines the following:

- amounts funded by each of the IOUs, per the CFA
- a summary of program expenditures and the allocation of these expenditures to each of the IOUs
- a calculation of interest applicable to each IOUs balance after program funding and expenditure amounts and
- a calculation of any applicable refund to the IOUs

Annual True-Up Report
Program Name: SW HVAC Program
Program Year: 2021
Lead: San Diego Gas & Electric

	PG&E	SCE	SCG	SDG&E	Total	Note on Row Content
Proportional Contribution per Load-Share	45.60%	32.08%	8.36%	13.96%	100.00%	For each IOU: its proportional share per CFA Exhibit B
Total Monthly CFA Payments Made	4,715,920.08	3,317,691.14	864,585.33	1,443,733.43	10,341,929.98	For each IOU: total dollar amount of payments for that Program Year for this SW Program
Total Interest Payment Accrued*	1,226.12	862.59	219.64	375.37	2,683.71	For each IOU: dollar amount of interest accrued on that IOU's Total Monthly Payments made
Program Costs Actually Spent	2,829,831.85	1,990,811.53	518,802.51	866,325.72	6,205,771.61	For each IOU: proportional share of the total program implementer contract costs for that Program Year
Annual True-Up Payment Accrued	1,887,314.35	1,327,742.19	346,002.46	577,783.08	4,138,842.08	For each IOU: dollar amount calculated as: [Total Monthly Payments Made + Total Interest Payment Accrued - Program Contract Costs Actually Spent]

*Interest is calculated by multiplying the following factors:
i. the average of the account balance at the beginning of the month and the balance in the account after the program funding and expense but before interest at the end of month

ii. one-twelfth of the interest rate on three-month nonfinancial Commercial Paper for the previous month, as reported in the Federal Reserve Statistical Release, H.15. or its successor

Attachments:
2021 Payment Schedule

Section 2 2021 Payment Schedule

- The purpose of the following table is to show the timing of the amounts funded by each IOU for the 2021 program year.\

2021 Payment Schedule Reflecting Months Payments Received

SDG&E SW HVAC Program

Parties	Annual Funding Contribution per Load-Share	2021 Annual Funding Contribution	2021 Funding/Payments							
			Funding/Payment 06/15/21	Funding/Payment 07/15/21	Funding/Payment 08/15/21	Funding/Payment 09/15/21	Funding/Payment 10/15/21	Funding/Payment 11/15/21	Funding/Payment 12/15/21	Total
SCE	32.08%	$ 3,317,691.14	473,955.88	473,955.88	473,955.88	473,955.88	473,955.88	473,955.88	473,955.86	3,317,691.14
SDG&E	13.96%	$ 1,443,733.43	206,247.63	206,247.63	206,247.63	206,247.63	206,247.63	206,247.63	206,247.65	1,443,733.43
SCG	8.36%	$ 864,585.35		247,024.38	123,512.19	123,512.19	123,512.19	123,512.19	123,512.21	864,585.35
PG&E	45.60%	$ 4,715,920.08	673,702.87	673,702.87	673,702.87	673,702.87	673,702.87	673,702.87	673,702.86	4,715,920.08
Total	100.00%	$ 10,341,930.00	$ 1,353,906.38	$ 1,600,930.76	$ 1,477,418.57	$ 1,477,418.57	$ 1,477,418.57	$ 1,477,418.57	$ 1,477,418.58	$ 10,341,930.00

EXHIBIT B

2021 Program Budget and IOU Funding Contribution

Party	2021 Proportional Contribution per Load-Share	2021 Annual Funding Contribution
SCE	32.08%	$3,317,691.14
SDG&E	13.96%	$1,443,733.43
SoCalGas	8.36%	$864,585.35
PG&E	45.60%	$4,715,920.08
2021 Program Budget	**100.00%**	**$10,341,930**