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 2022 RESULTS

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Pursuant to the Administrative Law Judge's (ALJ) Ruling Adopting Annual Reporting Requirements for Energy Efficiency (EE) 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 by ALJ Fitch on March 28, 2023, San Diego Gas & Electric Company (SDG&E) hereby submits its Annual Report for 2022 Energy Efficiency programs and accomplishments.[1]

SDG&E's Annual Report provides detailed portfolio, sector, and program-level information on the accomplishments of SDG&E's EE Portfolio in 2022, including data on energy savings, budget, cost-effectiveness and metrics. This Annual Report also includes Performance Metrics and 2022 performance results as required in D.18-05-041, OP 9.

Additionally, pursuant to OP 8 of D.18-01-004, the dollar amounts of third-party contracts (provided in aggregate) are included in Appendix A. 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)

[1] Pursuant to the email request of Southern California Edison Company (SCE) for an extension of the due date for the EE annual Report submission from May 1, 2023 to June 1, 2023, ALJ Fitch granted the request and postponed the due date for all program administrators.

California Energy Efficiency Statistics (EESTATs). The report and the Updated Set of Final Metrics are available on SDGE.com.

Lastly, SDG&E notes that this Annual Report includes two additional Appendices:

Appendix C – Corrections to Statewide (SW) Programs and Appendix D – Revisions to 2021 Annual Report.

As discussed further in Appendix C, in December 2022, Pacific Gas and Electric Company (PG&E) identified issues related to the 2020 SW Codes & Standards annual claims. After discussions with CPUC Staff, it was determined that the CEDARS system could not be reopened to allow adjustments to 2020 program year (PY) claims. As such, PG&E is reporting the impacts of the discrepancy in its 2022 EE Annual Report and SDG&E is following suit. Additionally, in February 2023, SCE identified changes required to their 2021 PY claims for the statewide upstream lighting program and provided itemized details for each claim in their amended 2021 annual report appendices in the CEDARS document library. As such, SDG&E demonstrated the impacts to SDG&E's portion of the upstream lighting program in Appendix C.

As discussed further in Appendix D, while preparing the 2022 Annual Report, SDG&E discovered two errors: the first is in the Environmental Impacts of EE Portfolio by Measure Use Category Table of SDG&E's 2021 Annual Report; and the second is correcting the TRC and

PAC values for without Codes and Standards calculations. As such, SDG&E demonstrates the two corrections in Appendix D and is amenable to additional direction from the Energy Division if further corrections are necessary.

Respectfully submitted,

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June 1, 2023

ENERGY EFFICIENCY PROGRAMS

ANNUAL REPORT

2022 RESULTS

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I. EXECUTIVE SUMMARY

2022 continued to be a year of transition for San Diego Gas & Electric's (SDG&E) energy efficiency (EE) portfolio. During the course of the year, SDG&E brought on four new third-party programs that were proposed, designed and implemented by third-party implementers, and continued to shut down approximately 18 legacy programs, some of which have been in market for 15 years. These programs have been in various stages of ramp-down as SDG&E has been transitioning and gearing up for an energy efficiency portfolio solely delivered through third-party implementers.

Partnering with third-party implementers is central to SDG&E's portfolio planning. Decision (D.) 18-01-004 requires that at least 60 percent of utilities' energy efficiency portfolio budgets be designed and implemented by third-party implementers by the end of 2022.[1] SDG&E has surpassed the 60 percent requirement for third-party designed and implemented programs and expects to maintain compliance in 2023 and beyond.[2]

The transition to third-party implementation has been a learning process for both investor-owned utility (IOU) and third-party personnel as regulatory, technical and quality assurance requirements and expectations continue to evolve. IOUs are still adapting to what it means to be an administrator, removed from implementing programs, but still responsible for meeting portfolio goals and ensuring compliant energy savings claims. Third parties are also adapting to their role as program implementers, responsible for not only generating program savings but also verifying savings claims are valid and compliant. Ongoing policy and technical changes require time for ramp up and adjustment for the various market actors who participate in energy efficiency. SDG&E has seen its third-party implementers struggle to deliver cost-effective programs that they designed while keeping up with rigorous data collection requirements and changing technical guidance.

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[1] D.18-01-004 at Ordering Paragraph (OP) 1.

[2] SDG&E 2022 Energy Efficiency Annual Report, Appendix A at Table 12, attached hereto. *See also* Application of SDG&E to Adopt 2024-2031 Energy Efficiency Rolling Portfolio Business Plan Pursuant to D.21-05-031 (March 4, 2022) (A.22-03-005, Application) at 4-7.

Adapting to the custom project process has proved to be especially challenging for implementers as the concept of program influence is complex and requires judgment and experience to implement. SDG&E has seen a steady decline of custom projects over the past two years as third-party implementers have struggled to get projects through the review process. SDG&E's 2022 custom claims represent approximately 22% of what they were in 2020 (less than a quarter are attributed to new third-party programs), the last year before third-party implementation. In pay-for-performance contracts, implementers must decide whether the time and effort spent developing a custom project will result in a positive impact to earnings as well as maintaining a positive customer experience. Delays and uncertainty in project approval leave customers frustrated and less likely to engage in programs for future upgrades. SDG&E is committed to working with its third parties and California Public Utilities Commission (Commission or CPUC) staff to improve the custom process in accordance with program and portfolio requirements and will continue to look for opportunities for collaboration and efficiencies.

SDG&E's core portfolio of programs achieved approximately 9.4 MW (43% of 22 MW), 50 GWh (48% of 104 GWh) and 2 million therms (100% of 2 MM Therms). Through combined program efforts of SDG&E's core portfolio and impacts of Codes & Standards, SDG&E customers saved approximately 309 GWh, 61 MW and 4 MM Therms. The portfolio lifecycle energy savings resulted in a reduction of approximately 173,107 metric tons of CO2 emissions, the equivalent of removing 38,522 cars off the road. SDG&E's energy efficiency portfolio provided potential customer lifecycle bill savings of approximately $2 billion.

Notable 2022 highlights include:

- SDG&E surpassed the 60% outsourcing requirement with the execution of its Local Industrial contract in August 2022.
- In the first year of segmentation, SDG&E's Resource Acquisition segment achieved a Total Resource Cost (TRC) of 1.0.

- SDG&E received advice letter approval for Statewide Plug Load and Appliance, Local Government, Residential Single Family and Local Agricultural programs.

- Solicitations concluded for Industrial, Residential Behavioral and Statewide heating, ventilation, and air conditioning (HVAC) Quality Installation and Quality Maintenance (QIQM), all of which received advice letter approval in early 2023. Statewide (SW) QIQM was the final solicitation to be completed from SDG&E's original solicitation plan that began in late 2018.

- SDG&E re-launched the Statewide Upstream HVAC program which included the incorporation of new data collection requirements and enhancement to quality assurance. The program delivered approximately 1100 fuel-substitution heat pump HVAC units and exceeded both its kWh and therm goals.

- The RZNET program continued to deliver exempt gas measures to mobile home and multi-family customers, exceeding its contracted therm goal and contributing to approximately 45% of SDG&E's therm goal achievement.

- Increased marketing efforts led more than 10,000 customers to visit the home energy audit tool, with 90% completing it. Additionally, audit enhanced customer offerings by adding experiences for both solar and EE charging customers.

- The Home Energy Report was delivered to over 700,000 residential customers, with over 200,000 customers participating in the Behavioral Demand Response program.

- The final year of implementation for the University of California (UC) / California State University (CSU) / California Community Colleges (CCC) partnership, which resulted in approximately 69 MW of demand reduction, 503 kWh/year and 27 million therms/year since the partnership was established in 2004.

Throughout 2022, SDG&E has remained committed to delivering quality programming to its customers and partnering with its third-party implementers to find ways to achieve cost-effective energy savings.

II. 2023 ENERGY EFFICIENCY PORTFOLIO OUTLOOK

In the first quarter of 2023, SDG&E ramped up multiple programs that will soon be in market. These approved third-party programs, as well as other programs in the solicitation phase, will help SDG&E maintain the 60% compliance requirement for third-party implemented programs, and reach 25% compliance requirement for statewide programs in 2023. Regarding solicitations, D.23-02-002 approved the IOUs commencing either one stage or two stage solicitations, which SDG&E believes will help to shorten the timeline for solicitations that are appropriate candidates for one stage solicitations, resulting in more quickly realized savings for customers.

Additionally, SDG&E is anticipating its Tier 2 True Up Advice Letter filing, which is scheduled to be filed on September 1, 2023. Multiple policy decisions will impact the magnitude of SDG&E's true up, including D.23-04-035, *Decision Addressing Codes and Standards Subprograms and Budgets and Staff Proposal on Reducing Ratepayer-Funded Incentives for Gas Energy Efficiency Measures*, the Potential & Goals Study and associated goal setting decision expected in Q3 of 2023, as well as the Commission's decision on Program Administrator's Business Plan Applications.[3] These changes will require SDG&E to rebalance its portfolio in a meaningful and compliant manner.

SDG&E is also gearing up its Market Support and Equity segments ordered in D.21-05-031 By the end of 2023, SDG&E expects to execute a number of contracts that will make up 30% of its portfolio budget, including the Statewide Residential HVAC Quality Installation/Quality Maintenance, Small Business Outreach, Workforce Education & Training, Residential Equity and Non-Residential Behavioral programs.

SDG&E plans to re-solicit the Statewide Commercial/Residential HVAC program to begin in 2025. Additionally, SDG&E will solicit programs for specific commercial sub-segments to replace the existing third-party implemented Large Commercial program and the legacy Business Energy Solutions programs which service small commercial customers. Sub-sectors include Groceries/Restaurants/Food Storage, Private Institutions/Healthcare, Lodging, and

[3] A.22-03-005, Application.

Wholesale/Retail/Offices. SDG&E will launch a final solicitation in late 2023 for a Market Support offering focused on residential fuel substitution.

III. STATEWIDE PROGRAMS

A. Overview of Statewide Sector

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.[4] The specific statewide programs and their assigned lead PA can be found in the tables below. The Commission identified the various areas of sole responsibility for the lead PA.[5] Among these responsibilities is the "[p]rocurement, contract administration, and co-funding management from partner program administrators" of the SW program.[6] In addition to these responsibilities, lead PAs collaborate with non-lead PAs to keep them informed on program progress, delivery, and budgets. SDG&E provides a status update on the statewide programs listed below. A summary narrative has been provided for SDG&E-led statewide programs that have either already launched or have reached the stage of seeking Commission approval of contracts through the advice letter process. SDG&E provides funding to the lead PA for each program as shown in Tables 3 and 4 of D.18-05-041. SDG&E receives credit for the proportional benefits from statewide programs through the CPUC's California Energy Data Reporting System (CEDARS). Please refer to the lead program administrators' respective 2022 Annual Reports for information on statewide programs for which they are responsible. Descriptions of SDG&E-led statewide programs follow.

Lead Program Administrator for Statewide Programs

Statewide Program	Lead PA
Plug Load & Appliance	SDG&E
HVAC (Upstream Residential and Commercial)	SDG&E

[4] D.18-05-041 at 79 – 80 and 90 – 92.

[5] *Id.*, OP 18 at 185-186.

[6] *Id*. at 186.

Residential New Construction	PG&E
Non-Residential New Construction	PG&E
Codes & Standards (Building Codes Advocacy)	PG&E
Codes & Standards (Appliance Standards Advocacy)	PG&E
Codes & Standards (National Advocacy)	PG&E
Emerging Technology (Gas)	SCG
Emerging Technology (Electric)	SCE
Workforce Education & Training	PG&E
Higher Education	SCE
State of California	PG&E
Lighting	SCE
Foodservice Point of Sale	SCG
Midstream Water Heating	SCG

Lead Program Administrator for Statewide Downstream Pilot Programs

Statewide Program	**Lead PA**
HVAC Quality Installation/Quality Maintenance (QI/QM)	SDG&E

Water/Wastewater Pumping Program	SCE
Workforce Education & Training (Career and Workforce Readiness)	PG&E

The following program narratives are for statewide programs administered by SDG&E.

B. Programs

1. SDGE SW_HVAC_Up - SW Upstream HVAC Program

Program Overview

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 and packaged air conditioners, commercial heat pumps, commercial chillers, commercial space heating boilers, 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, marketed as "Comfortably California," was proposed and designed, and is implemented and delivered by CLEAResult. 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: SDG&E, Southern California Gas Company (SCG), Southern California Edison Company (SCE), and Pacific Gas and Electric Company (PG&E).

Program Strategies and Outcomes

The program 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 implementation efficiencies to be leveraged by maintaining fewer 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 current implementation agreement term is three 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 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. For instance, the program hosted partner forums to learn about challenges and successes and used these forums to pivot the implementation of the program as needed. The program also supports its partners through marketing and has worked directly with several distributors on marketing projects to help promote high-efficiency products.

At the beginning of the year, SDG&E required that the installation end user's address and contact information be included in the data collection plan to support ex-post program review. This change resulted in a significant go-to-market delay by the implementer due to significant infrastructure changes to systems and processes for an upstream and midstream program model. This additional data requirement at the enrollment level has also caused hesitation on the part of the program partners and had a negative impact on program satisfaction. The implementer pivoted the program outreach strategy to focus on informing installation contractors about the program, the data requirements, and the expectation for potential incentives. This change in strategy aided the program partners' data collection efforts significantly.

Despite the mid-year relaunch, the program has overperformed against portions of the savings goals for the year. This overperformance in savings can be attributed primarily to the introduction of fuel substitution heat pump measures into the program. Residential fuel substitution heat pump measures accounted for a majority of the kWh savings in the program, which also directly contributes to California's decarbonization goals. During the course of program administration, SDG&E initially took a conservative approach to qualifying fuel substitution enrollments, requiring that both the gas and electric provider be a funding IOU. After revisiting this enrollment qualification process, SDG&E aligned the customer eligibility requirement with guidance provided in D.19-08-009 that allows fuel substitution regardless of whether both electricity and natural gas service are provided by Commission-regulated entities.[7] The requalification of these previously disqualified fuel substitution projects has resulted in additional program savings.

SDG&E has committed November and December 2022 sales and the previously disqualified fuel substitution enrollments, to ensure there is adequate time for customer installation and verification activities.

[7] D.19-08-009, Conclusion of Law 2 at 53.

In spite of challenges presented by the new data collection requirements, the implementer was also able to surpass the partner enrollment goal. One method used for achieving this goal was the development of a data collection tool that can be used by the installing contractors for submitting installation end user data. While the program was successful in surpassing the program partner enrollment goal and achieving greater kWh savings than in 2021, the overall program TRC dropped by approximately 10 points due to the higher cost of collecting end user information through a midstream delivery model. Cost-effectiveness will continue to be a challenge as data collection requirements increase.

Due to surpassing the enrollment goal, the program's 2022 expenditures exceeded the 2022-2023 Biennial Budget Advice Letter #3887-E-A/3035-G-A, approved February 15, 2022 and effective January 1, 2022 (2022-2023 BBAL) 2022 budget value by $2.9M from the filed amount of $13.1M.[8] SDG&E coordinated with the non-lead IOU PAs and each agreed to participate in the overspend in an amount equal to their load share allocation per the SW HVAC Co-Funding Agreement.

SDG&E additionally coordinated with ED staff as guidance provided in D.18-05-041 does not address fund shift considerations for SW co-funded programs in-line with requirements of D.15-10-028. A fund shift that satisfies the requirements of D.15-10-028 (reflecting the fund shift in the tracking tool [CEDARS]) cannot currently be executed in CEDARS due to system limitations of the CEDARS SW module. SDG&E resolved with ED staff, document in this Annual Report narrative, how a fund shift would be accommodated if the functionality were in place. Per the Table below, 2022 SW HVAC exceeded the budget by $2.9M, which would have been fund shifted from the SW Plug Load & Appliance (PLA) program. The total 2022 program year expenditures of SDG&E-led SW co-funded programs do not exceed the total SDG&E led 2022 program year budget amount per the 2022-2023 BBAL Appendix A, Table 6.

CEDARS Prog ID	Program Name	2022 BBAL Budget	2022 Expenditures + Commitments	Difference
SW_HVAC_UP	SW Upstream HVAC	$ 13,097,045	$ 15,975,375	$ (2,878,330)
SW_PLA	Plug Load and Appliances (PLA)	$ 14,735,004	$ 1,874,771	$ 12,860,233
	Total	**$ 27,832,049**	**$ 17,850,146**	**$ 9,981,903**

[8] 2022-2023 BBAL, Appendix A Table 6.

2. SDGE_SW_PLA - Plug Load and Appliances (PLA)

Program Overview

The Statewide Plug-Load & Appliance program is a midstream program that offers energy efficiency measures to residential customers across the four IOU service territories; SDG&E, SCG, PG&E, and SCE.[9] The Statewide Plug-Load & Appliance program provides the expertise and infrastructure needed to maximize customer/supply chain participation and energy savings while supporting data collection and product focus required for reliable energy savings and program cost-effectiveness. The Statewide Plug-Load & Appliance program engages "Program Partners" – retailers and distributors – to offer incentives for energy-efficient equipment that will deliver energy savings for residential customers.

Program Strategies and Outcomes

The Statewide Plug-Load & Appliance program offers two pathways through the midstream model: a distributor and a retailer pathway. Both pathways focus on assisting the partners in developing a procurement strategy that enables them to meet customer demand for high-efficiency units. The distributor pathway launched on August 15, 2022, and enrolled 11 distributors. This pathway implemented an online portal for distributors that allows for product validation, customer eligibility, and reporting. The retailer pathway launched on September 26, 2022, enrolling five major retailers with a chain of stores for a total of 384 brick and mortar locations across the state of California. This pathway implemented an online instant rebate coupon portal for end-use customers to obtain rebate coupon(s) redeemed at participating retailer locations. The online instant rebate portal allows for instant customer validation, product validation, and reporting.

The program deployed various marketing campaigns to increase customer participation. First, it developed a single statewide program name and branding that would be delivered uniformly across the state. Strategies for creating the brand included developing a program website and placing in store point-of-purchase materials in participating partner locations. Additionally, a series of various marketing efforts were implemented to increase customer awareness and participation. These included paid media and search advertising, email campaigns, and providing marketing collateral for partner events.

[9] The Statewide Plug-Load & Appliance Program Advice Letter 3942-E/3059-G and 3942-E-A/3059-G-A was approved and effective on May 23, 2022 and is available at: https://tariff.sdge.com/tm2/pdf/submittals/ELEC_3942-E-A.pdf.

Through these strategies, the program successfully developed key partnerships with manufacturers, Energy Star, the Statewide Technology and Equipment for Clean Housing (TECH) program, and the four IOUs to further spread awareness about the program. The partnership with manufacturers and Energy Star has led to promotion of the program's available rebates. The partnership with the Statewide TECH program led to promotion of the program in their monthly newsletters to contractors as well as promotion of the program on their website. Additionally, the partnership with the four IOUs has led to great collaboration which resulted in stronger customer validation and program simplicity. The program engaged with all four IOUs to coordinate the integration of the Program's instant rebate coupon portal with the IOU customer databases to fully validate the eligibility of each customer. The program promotes participation in each IOUs' demand response programs to customers in the portal's automated communications that provide the customer with a coupon for demand response-enabled products (e.g., smart thermostats). Additionally, the program coordinated with PG&E's Smart AC thermostat program to simplify the process of PG&E customers getting a rebate on a smart thermostat, through the Program, while also signing up for their Smart AC program.

With the collaboration of these partnerships, the program saw approximately 92% participation in the smart thermostat measure, 3% in the fuel substitution heat-pump water heater measure, 1% in the gas water heater measure, and 4% in the heat-pump water heater measure.

3. SDGE_SW_HVAC_QIQM – SW HVAC QI/QM Program

Program Overview

The Statewide Residential HVAC Quality Installation and Quality Maintenance (QI/QM) program went through the negotiation process of the solicitation between June 21, 2022, and January 10, 2023, and Frontier Energy was selected as the third-party implementer. SDG&E's Tier 2 Advice Letter 4149-E was submitted to the CPUC on January 24, 2023.

SDG&E selected Frontier Energy's "Quality Residential HVAC Services" program to implement the Statewide Residential HVAC QI/QM program. Frontier Energy was chosen after a comprehensive review of its program design to ensure the reasonableness of the contractor's proposal. Additionally, the selection included a thorough review to ensure this program's primary objective supported the long-term success of the energy efficiency market by educating customers, training contractors, building partnerships, or moving beneficial technologies towards greater cost-effectiveness.

Quality Residential HVAC Services will be a Market Support program that will incentivize quality maintenance plans, quality maintenance calls, quality bids, and quality installations, at a basic or

enhanced quality tier service level delineated within the program manual. The program will provide extra incentives, training, and tools to quality contractors, who routinely provide higher quality services. An industry Advisory Panel, made up of HVAC industry subject matter experts, will help determine standards for services, verification requirements, and outreach and training, particularly for contractors who serve Disadvantaged Communities and hard-to-reach customers.

SDG&E and Frontier Energy have agreed on a payment structure that will help ensure the program achieves its objectives during the program's four-year contract term. SDG&E will actively monitor the program's design, implementation, delivery functions and expenditures to ensure the third-party contractor is operating within its designated budget. The contract includes detailed but objective key performance indicators (KPIs) that will inform both SDG&E and Frontier Energy of progress towards the program's goals and objectives.

Program Strategies and Outcomes

The Quality Residential HVAC Services Tier 2 Advice Letter was approved by the CPUC on February 24, 2023 and the program is projected to launch by the beginning of the third quarter of 2023.[10]

[10] SDG&E's Advice Letter 4149-E, approved and effective February 24, 2023, available at https://tariff.sdge.com/tm2/pdf/submittals/ELEC_4149-E.pdf.

Statewide Codes & Standards Advocacy Programs

4. **SDGE_SW_CAS_Nat_PA - SW Codes & Standards Advocacy - National Codes & Standards Advocacy (Utility) (NET SAVINGS)**
5. **SDGE_SW_CSA_Appl_PA - SW Codes & Standards Advocacy - Advocacy State Appliance Standards (Utility) (NET SAVINGS)**
6. **SDGE_SW_CSA_Bldg - SW Codes & Standards Advocacy - State Building Code (Utility) (NET SAVINGS)**

The programs listed above are PG&E-led Statewide Codes and Standards (C&S) Advocacy Subprograms that went into 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, and 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 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 California Energy Commission (CEC), Department of Energy (DOE), or Environmental Protection Agency (EPA). Advocacy review documents include Title 24 and Title 20 Codes and Standards Enhancement (CASE) reports, Code Change Savings Reports (CCSR), state and 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 CEC (Title 24 and Title 20) and DOE rulemakings.

- For National Codes and Standards, SDG&E responded to DOE, EPA, Federal Trade Commission (FTC), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and International Energy Conservation Code (IECC) rulemakings in coordination with PG&E through reviewing the 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 Distributed Energy Resource (DER) appliance and building regulations.
- For State Appliance Standards, SDG&E participated in meetings and responded to CEC Title 20 and Flexible Demand Appliance Standards (FDAS) rulemakings in coordination with PG&E through reviewing the third-party vendors' CASE reports, comment letters, data collection and measure analyses 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 statewide coordination is structured to streamline the administration costs while maintaining the needed support for the Advocacy subprograms.

IV. AGRICULTURAL PROGRAMS

A. Overview of Agriculture Sector

San Diego County ranks in the top 20 largest farm economies in the nation, with top crops in nursery, avocados, tomatoes, citrus, poultry, strawberries, and more. Almost 70 percent of San Diego County farms are less than 10 acres and nearly 35 percent are operated by women. San Diego County also has more certified organic growers than any other county nationally, with more than 360 certified organic farms.[11]

SDG&E's agricultural sector has significantly smaller consumption than the agricultural customers of other California IOUs. It is also the smallest sector in SDG&E's energy efficiency portfolio, representing 1.4 percent of total portfolio electric consumption and 0.6 percent of portfolio gas consumption. The agricultural sector provides 0.15 percent of the portfolio's electric savings and 3.4 percent of the gas savings. SDG&E's agricultural sector customer usage breaks down as follows: 81 percent of the accounts are under 20 kW (small), 18 percent of accounts are between 20-199kW (medium), with the remaining 1 percent representing customers 200kW and above (large). The SDG&E agriculture sector represents approximately 5,700 farms and can be characterized by five main features: (i) mild climate; (ii) expensive land; (iii) poor soils, and (iv) small, numerous farms.[12]

B. Programs

1. SDGE3236 – Comprehensive Audit Program (CAP)

Program Overview

The CAP 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 ASHRAE Level 1 or 2 audit report. SDG&E offers two types of audits:

[11] Farm Bureau, San Diego County, The Voice of Local Farmers, Target Market, *available at* https://www.sdfarmbureau.org/our-mission/.

[12] A.22-03-005, Application at 13, and citing to Exhibit 2.

- 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;

- 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.

Program Strategies and Outcomes

The agricultural sector continued to be a challenge for SDG&E due to limited customers in this segment. Historically, this program has had low participation and has continued to diminish over the years. In 2022, there were no new audits submitted. In June 2022, the Comprehensive Audit Program stopped accepting new agricultural audit applications to prepare for the new, third-party implemented program Ag-STAR [Savings, Training, Assistance and Rebates] which was approved in August 2022.

2. SDGE3237 – Energy Efficiency Business Incentives (EEBI)

Program Overview

The calculated incentives program provided customized incentives for non-residential energy efficiency (agricultural) 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.

Program Strategies and Outcomes

In July 2022, the long-running calculated incentive program (marketed as EEBI) stopped accepting new agricultural applications to prepare for the new, third-party implemented Ag-STAR program. To ensure a smooth transition to the implementer, program staff collaborated with third-party program solicitation personnel, marketing leads, and SDG&E's Business Services team.

SDG&E received one application in early 2022 and will continue to guide that project through to post installation and payment.

3. SDGE3239 – Energy Efficiency Business Rebates (EEBR)

Program Overview

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.

Program Strategies and Outcomes

In July 2022, the long-running deemed rebate program (marketed as EEBR) stopped accepting new agricultural applications to prepare for the new, third-party implemented Ag-STAR program which launched in August 2022. Announcements, eligibility rules, and measure catalog were made available to potential participants on www.sdge.com with a direct link to the new program.

4. SDGE3322 – Streamlined Ag Efficiency (SAE)

Program Overview

The SAE program began in June 2017 and 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 robust participation, growing sector savings, and a vendor community able and willing to articulate the benefits of energy efficiency to their customers.

Program Strategies and Outcomes

The program implementer utilizes 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 Measurement & Verification (M&V) in an end-to-end way that minimizes transaction costs for the customer. The implementer attended agricultural events and trade shows to network, promote the program, and inform customers of the different offerings and services available to them. To increase participation, the implementer reviewed and organized

customer lists by size, previous engagement, North American Industry Classification System (NAICS) codes, and association with known vendors and assigned engineers to engage potential program participants. Program marketing and outreach at trade events was also conducted. Although several customers expressed interest in the program, only one customer submitted a program application.

As a result of the launch of the new third-party program, the attention shifted from marketing to completing or closing ongoing projects, and transferring potential leads to the new third- party local agriculture program. The SAE program closed at year-end.

5. SDGE4009 – Ag-STAR (Savings, Training, Assistance and Rebates)

Program Overview

The Ag-STAR program is a third-party program implemented by Cascade Energy. The Ag-STAR program offers a suite of energy efficiency services to SDG&E's entire agricultural sector, tailored to their business type, operation size, financial needs, and geography. Ag-STAR provides training for customers and vendors, high-quality engineering support, creative incentives, and an innovative path to cost-effective energy savings for the small and medium businesses that make up the majority of SDG&E's agriculture customers. The Ag-STAR program also presents opportunities to integrate energy efficiency and demand response in the agriculture market segment.

Program Strategies and Outcomes

On July 22, 2022, SDG&E submitted Advice Letter 4045-E requesting approval of the third-party contract with Cascade Energy, and a substitute sheet was submitted on August 16, 2022. SDG&E's Advice Letter was approved on August 31, 2022, effective August 30, 2022, and Cascade Energy received its Notice to Proceed the same day.

Program ramp-up activities began with an anticipated program launch on December 1, 2022. Cascade Energy participated in the Draft Implementation Plan webinar hosted by SDG&E on October 13, 2022. The Implementation Plan was finalized and posted to the CEDARS website on October 28, 2022.

SDG&E met regularly with Cascade Energy to keep ramp up activities on schedule. SDG&E created invoicing and program monitoring templates, along with a program database to capture program enrollments, inspections, engineering reviews and invoicing. In addition, SDG&E

provided comments on the first submittal of marketing materials, including a general program flyer, custom incentives flyer, deemed rebates flyer, general brochure, and program applications.

Cascade's staff responded to several customer inquiries regarding program eligibility, resulting in one project completed in 2022.

V. COMMERCIAL PROGRAMS

A. Overview of Commercial Sector

SDG&E's commercial sector is the largest sector within SDG&E's service territory with ample energy savings opportunities. SDG&E provides electricity and gas service in San Diego and southern Orange Counties, including customers in all varieties of non-residential, non-manufacturing business establishments, such as hotels, restaurants, wholesale businesses, retail stores, warehouses, storage facilities, and health, and social institutions. The commercial sector represented approximately 40 percent of SDG&E customers' total electric energy consumption, 33 percent of portfolio electric energy efficiency spending, and 6 percent of SDG&E's portfolio electric savings. For the same period, the commercial sector represented approximately 28 percent of total gas consumption and 6 percent of portfolio gas savings.[13]

Although the commercial sector is SDG&E's largest, it primarily consists of very small customers. SDG&E defines customers by electric demand: small (<20 kW), medium (20 –199 kW), and large (>200 kW). These ranges and the distribution of customers within them differ significantly by California utility. Looking at SDG&E's commercial sector, approximately 77 percent of commercial customers are under 20kW (small). The preponderance of small commercial customers within the sector poses unique challenges but also creates opportunities for SDG&E to pursue innovative approaches to achieving energy efficiency goals.

B. Programs

1. SDGE3217 – Comprehensive Audit Program (CAP)

Program Overview

The CAP is an IDSM audit offered to commercial customers. The program provides customers with a comprehensive audit report equivalent to an 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

[13] A.22-03-005, Application at 14, and citing to Exhibit 2.

efficiency, demand response and distributed generation opportunities. Program audits are performed by engineering firms, and the audit report delivers valuable insights to the customer 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.

Program Strategies and Outcomes

In 2022, the CAP program was limited to Public Sector customer participation due to the successful launch of the new Comprehensive Energy Management Solutions (CEMS) Program. Although the program was open, there were no new enrollments and the program fully shut down in Q3 2022 with the successful launch of SDG&E's new public sector programs. As part of the program closure process, SDG&E sent out program closure notifications to all CAP participating vendors, held a Program Closure webinar and subsequently filed the program closure Advice Letter on September 15, 2022.

2. SDGE3220 – Energy Efficiency Business Incentives (EEBI)

Program Overview

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 2022, the focus of the program was limited to public sector customers due to the launch of new third-party programs serving the commercial sector.

Program Strategies and Outcomes

In preparation for permanent program closure of the long-running program, SDG&E hosted bi-monthly meetings to review the program's project queue and regularly followed-up with project sponsors, SDG&E's Business Services team, and other stakeholders to ensure projects were processed and paid in a timely manner. 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 one project in 2022 and will continue to guide the remaining public sector projects through to post installation and payment.

3. SDGE3222 – Savings By Design (SBD)

Program Overview

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.

Program Strategies and Outcomes

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 in 2022. Additionally, projects in the early phases of planning in 2021 were reviewed and contracted according to program guidelines and those projects will be inspected as they are completed throughout the next couple of years.

SDG&E continued to work closely with the CPUC's Custom Project Review team to address questions and obtain guidance for existing projects. SDG&E successfully paid incentives and closed six projects in 2022 and will continue to guide the remaining SBD projects through to post installation and payment phases.

4. SDGE3223 – Energy Efficiency Business Rebates (EEBR)

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.

Program Strategies and Outcomes

In 2022, the EEBR program was limited to local government and higher education customers due to the new Comprehensive Energy Management Solutions, Federal – SD EnergyLink and K12 Public third-party programs successfully launching. In past years, the Commercial Deemed Incentive program participants were the Large Commercial, K-12 and Federal Customers. With the new third-party programs launching, there was minimal participation in the EEBR program. As part of the program closure process, SDG&E held a Program Closure webinar and subsequently filed the program closure Advice Letter on September 15, 2022.

5. SDGE3226 – Business Energy Solutions (BES)

Program Overview

The Direct Install Program, also referred to as the BES program, delivers no cost or discounted energy efficiency equipment upgrades through installation contractors to reduce peak demand and energy consumption for non-residential customers. 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.

Program Strategies and Outcomes

SDG&E extended its contract with the program's authorized contractor in 2022 with a limited focus on local government and higher education customers. The program was originally slated to close mid-to-late 2022, after the new third-party programs for these customers launched. However, due to the early closure of the third-party Small Commercial program, the BES Program was extended to service small commercial customers until a new solicitation could be completed.

During the first half of 2022, the program's contractor completed projects at several of their locations. Updated program brochures specific to local government and higher education customers were developed, and an email campaign was deployed to further promote program participation. All projects for public customers were completed before the fourth quarter and the contractor worked on close-out activities while the new third-party programs launched. At the same time, the program began to ramp back up to service small commercial customers with a maximum monthly demand of 20 kW to cover the gap in offerings and help contribute to the portfolio's energy savings goals. SDG&E engaged two contractors to serve the small commercial market and installations began during the fourth quarter of 2022. To help the contractors construct a pipeline and accelerate program enrollment, SDG&E shared a list of qualifying customers with the program contractors. SDG&E also launched email and postcard marketing campaigns to inform customers of the updated program offering and encourage participation from small commercial customers. The campaigns proved to be effective and led to an increase in customer interest.

Overall, the program successfully installed energy efficiency upgrades at more than 100 customer sites. The program will continue to service small business customers until the end of 2023. A new Small Business Equity solicitation is currently underway and is expected to serve small businesses in 2024.

6. SDGE3327 – Retro Commissioning Program (RCx)

Program Overview

The High Opportunity Project or Programs (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.

Program Strategies and Outcomes

The HOPPs RCx program stopped accepting new projects at the end of 2019. All remaining projects in the pipeline have completed installation and are within the post-implementation measurement and verification stages. Non-routine events (NRE) related to COVID-19 continue to impact the annual monitoring data and verification. The program utilizes the templates and guidelines developed in 2021 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.

In 2022, the program supported annual monitoring analysis and completed evaluations for eight projects requiring measurement and verification of the projected annual energy savings. Of the eight projects evaluated, five completed the third and final year of monitoring.

7. SDGE4003 – Small Commercial

Program Overview

SDG&E's third-party implemented Small Commercial Program (SCP) delivered comprehensive, integrated EE and demand response (DR) savings to commercial customers with a total maximum monthly demand of 20 kW or less. The program utilized deemed and custom savings platforms to influence, calculate, and incentivize customers for energy savings, and its integrated delivery team sought to provide full customer service and a complete energy efficiency solution through a single point of contact.

Program Strategies and Outcomes

Although launched in 2021, SCP was proposed and designed prior to the COVID-19 pandemic (COVID-19). The pandemic and resulting economic environment caused many changes that were not anticipated when the program was proposed and designed and were beyond the implementer's

control. Small businesses, in particular, were severely impacted by the economic downturn resulting from the pandemic. As a result of these unexpected challenges, the resources needed to support operations were found to be cost-prohibitive and unsustainable and the program implementer notified SDG&E that they would be pausing all sales efforts effective December 31, 2021.

Despite efforts to bring the program back on track, post COVID-19 restrictions, SDG&E determined that the program was unable to perform per the terms of the Scope of Work set forth in SDG&E's agreement with the implementer. On January 12, 2022, SDG&E notified the implementer that it planned to close SCP and moved forward with the next steps on the Commission's Program Shutdown Checklist. SDG&E notified its service list of the forthcoming closure on February 3, 2022, and hosted a webinar on March 1, 2022, to inform stakeholders and seek input.

On March 24, 2022, SDG&E filed Advice Letter 3972-E requesting approval to close SCP. Within its Advice Letter, SDG&E explained that its legacy BES program would expand to serve the small commercial segment to prevent a gap in offerings until a new third-party solicitation could be completed. Prior to the launch of the SCP, the BES program serviced small commercial customers to ensure continuity of service. On April 19, 2022, SDG&E's Advice Letter 3972-E was approved, effective April 25, 2022 and SCP was closed.

Prior to the closure of the program, the implementer focused on closing out remaining projects and finishing program reports. The program completed installations at just over 20 small business locations before shutting down.

SDG&E currently has a solicitation underway for a new third-party program under the Equity Segment that will target the hard-to-reach and underserved small business market. The new program is expected to launch in 2024. In the meantime, energy efficiency offerings are available to small commercial customers through the BES program.

8. SDGE4004 – Large Commercial

Program Overview

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 is implemented by TRC Companies, Inc. and 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.

Program Strategies and Outcomes

The CEMS program continued to leverage its network of trade professionals developed in 2021 to install deemed measures throughout SDG&E's service territory in 2022. Deemed projects continue to be an opportunity to build trust with customers and generate interest for participants to pursue additional energy efficiency projects. The CEMS program continues to see repeat customers utilize rebates for deemed measures. Common deemed measures included auto-door closers, LED lighting, Anti-Sweat Heater (ASH) controls, reach-in freezers, ice makers and fryers, which generated most of the program's savings in 2022. Developing a pipeline of custom projects was also a focus of the program throughout 2022. The implementer's outreach team continuously collaborated with customers to identify potential custom energy-efficiency projects. These efforts brought approximately twenty additional custom projects in 2022, with five installations completed by the end of the year.

In program year 2022, the CEMS program experienced several challenges including the Custom Project Review process (CPR) with the CPUC Ex-Ante team and diversifying measure implementation. The CPR process impacted the CEMS program throughout 2022, and the implementer struggled to establish program influence on potential projects. Some projects struggled to meet the program influence threshold outlined in the Statewide Custom Project Guidance Document.[14] In addition to the program influence barrier, review periods (averaging approximately 3 months) often delayed projects and put a strain on the customer experience for custom projects. The CEMS program also struggled to implement a diverse group of Energy Efficiency Measures (EEM), only implementing approximately 6% of all EEM linked to the program.

The implementer's marketing efforts continued throughout the year focusing on email campaigns and digital marketing. Refreshing the program website was also prioritized by the marketing team at the start of the year. The new website launched in February 2022 and has a simplified design based on customer experience exercises. It also incorporates new visual elements, such as a program video, to make the site more engaging. In addition, both in-person and virtual events will continue to be an important component of the program's marketing strategy. The program hosted

[14] CPUC, Custom Projects Review Guidance Documents, available at https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/energy-efficiency/custom-projects-review-guidance-documents.

its first in-person event in the second quarter of 2022. SDG&E helped to support these marketing efforts by leveraging its Account Executives to set up introductory meetings with potential customers and by coordinating a postcard campaign to further promote the program.

Several other initiatives were implemented in 2022 to improve the customer's experience and help drive increased participation. At the end of the third quarter the implementer increased incentives across-the-board for an end-of-year push. All program offerings were evaluated, which resulted in increased incentives for approximately 118 measures and added approximately 136 measures to the program that were not previously offered. In addition, the program developed a deemed savings calculator to help customers and trade professionals identify savings potential. The program also implemented the Modified Lighting Calculator (MLC) tool to streamline and simplify custom lighting projects and CEMS's Direct Install partner canvassed 68 sites.

VI. INDUSTRIAL PROGRAMS

A. Overview of Industrial Sector

Although this sector is relatively small, it includes some of the company's largest consuming individual customers with more than 3,000 manufacturing companies from defense and aerospace to computer electronics and solar panels, to biotechnology. Many of the customers in this sector are in the small to medium range, with around 96 percent of accounts having electric demand under 200 kW and around 74 percent under 20 kW.[15]

Energy consumption by industrial users in the United States, primarily manufacturing-related, receives significant scrutiny because of their large scale and impact on the economy. Though quite diverse, SDG&E's industrial sector has significantly smaller consumption than the industrial customers of other utilities, even within California. In addition, as noted above, most local industrial accounts are "small-sized," with almost three-quarters of accounts registering 20 kW of demand or less. SDG&E's industrial sector comprises roughly eight percent of the service territory's electricity consumption.

Utilizing the NAICS designations, SDG&E has categorized its industrial accounts by industry type, grouped them by similar energy usage patterns, and found that the majority fall into the following five main segments:

- Sand, Gravel & Contractors — Industry contractors and construction (plumbing, electrical, heating, A/C, special trades, roofing, etc.), natural gas extractions, landscape, and masonry.
- General Manufacturing — Commercial bakeries and breweries, machine shops, fabrication, textile, and woodworking manufacturing.
- Large Manufacturing — Aircraft, engine, bicycle, turbine, A/C, and commercial refrigeration manufacturing.
- Electronics/Telecommunications — Manufacturers of communications, audio/visual, TV/Radio, computer and circuit assembly, and other forms of electronic equipment.
- Biotech, Laboratories, and Research — Pharmaceutical, biological, medicinal, and botanical manufacturing

[15] A.22-03-005, Application at 18 and citing to Exhibit 2.

B. Programs

1. SDGE3227 – Strategic Energy Management (SEM)

Program Overview

The 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.

Program Strategies and Outcomes

SDG&E and its contracted implementer worked closely in 2022 to complete the fourth year of the SEM program. Activities included workshops, Cycle 2-Year 2 completion reports, evaluating savings claims, and formulating robust Action Plans with participants. The most prominent activities for participants in 2022 were the completion of their energy projects. Key activities completed in 2022 include:

- Development and Implementation of Cycle 2 Year 2 Training Material
- Updated Opportunity Registers for each Participant
- Cycle 2-Year 2 Action Plans
- Cycle 2 Year 2 Phase Summaries
- Employee Competency Training
- Workshop 3b, Competency in Action
- Workshop 4, Celebrating Accomplishments

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 performance in cumulative-sums and other graphs through this software. An opportunity register is also a part of the software and updates are shared between the implementer and participant in real time. The software provides awareness on potential savings, progress toward completion and Greenhouse Gas reductions resulting from energy savings, as well as 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.

All seven of the participants completed the third milestone by February 15, 2022, and six of the seven completed the fourth milestone by August 15, 2022, and received incentives for each milestone. Milestones required updated production and energy usage data, updated opportunity registers, notes, and persistence strategies on all completed projects. In addition, the participants completed numerous large and complex Behavioral, Retrofit and Operational projects. These efforts resulted in kWh and kW savings higher than projected targets. Participants from all seven sites finished the second year of Cycle 2 with many successes.

Cycle 2 SEM was completed for participants in August 2022. Administratively, the Cycle closed at the end of 2022. SDG&E opted to move forward and serve more customers with a new third-party industrial program that includes an SEM component with the same implementer. All seven participants have expressed interest in continuing with Cycle 3 and are expected to participate in the new third-party offering in 2023.

2. SDGE3229 – Comprehensive Audit Program (CAP)

Program Overview

The CAP is an IDSM audit offered to industrial customers. The program provides customers with a comprehensive audit report equivalent to an ASHRAE Level 1 or 2 report. SDG&E offers two types of audits: 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 ASHRAE Level 2, which is a more detailed analysis of selected measures with investment-grade savings and financial calculations and deliverables. The ASHRAE 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 ASHRAE Level 1 and ASHRAE 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.

Program Strategies and Outcomes

The Comprehensive Audit Program for the industrial segment resulted in 17 customer audits performed in 2022. Audits were conducted for various business types including manufacturing facilities, water treatment plants, and research and development facilities. The audits resulted in customers receiving a report that includes a complete inventory of their energy consuming

equipment. SDG&E also performed ASHRAE Level 2 audits for customers that had previously completed an ASHRAE Level 1 audit. The ASHRAE Level 2 audit was performed based on specific measures from the ASHRAE Level 1 report, allowing for a comprehensive evaluation. In addition, SDG&E worked with the contracted engineering firms to guarantee that all industrial audits were completed by the end of the 2022 year to prepare for the new third-party industrial programs launch. To ensure industrial customers who participated in the CAP program can leverage audit findings, the CAP information will be supplied to the new third-party industrial implementer as requested.

3. SDGE3231 – Energy Efficiency Business Incentives (EEBI)

Program Overview

The Calculated Incentives program (marketed as EEBI) 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.

Program Strategies and Outcomes

In preparation for permanent program closure of the long-running program, SDG&E hosted bi-monthly meetings to review the program's project queue and regularly followed-up with project sponsors, SDG&E's Business Services team, and other stakeholders to ensure projects were processed and paid in a timely manner.

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 four projects in 2022 and will continue to guide the remaining industrial projects through to post installation and payment phases.

In 2022, the long-running calculated incentive program stopped accepting new industrial applications to prepare for the launch of a new third-party industrial sector offering.

4. SDGE3233 – Energy Efficiency Business Rebates (EEBR)

Program Overview

The Statewide Industrial Deemed Incentives program (marketed as EEBR) 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.

Program Strategies and Outcomes

The program saw very limited participation in 2022 and initiated ramp down activities to prepare for the launch of the new third-party industrial program that received Advice Letter approval in early 2023. As part of the program ramp down process, SDG&E notified stakeholders of the program closure, updated the program website and removed the online application.

VII. PUBLIC PROGRAMS

A. Overview of Public Sector

The public sector is defined as the group of customers that are taxpayer funded, have political mandates, and that must go through a public budgeting and decision-making process.[16] In recent years, this sector accounted for around 15 percent of SDG&E's system electric consumption, 12 percent of portfolio electric energy efficiency spending, and 4 percent of SDG&E's portfolio electric savings. For the same period, the public sector represented approximately 9 percent of total gas consumption and 2 percent of gas energy savings. Despite this relatively small percentage of direct electric consumption and electric savings, the public sector influences and informs and therefore contributes to both residential and non-residential markets, making it important to all sectors.

SDG&E's public sector is made up of many small accounts, which SDG&E defines as having an annual peak demand of less than 20 kW. Approximately 77 percent of public sector accounts in SDG&E's territory have peak demand of less than 20 kW.

In addition to the unique characteristics of the public sector market, it is important to define and understand the market segments that make up the public sector to best meet their needs and achieve statewide goals. Market segmentation provides additional insights that can inform targeting, strategy, and program design, ensuring that program offerings meet the particular needs of various types of public sites. Utilizing the NAICS designations, SDG&E has identified its public sector customers and has categorized them into four segments: local government, state, federal, and education.

These segments show the diversity of SDG&E's public sector energy consumption, with the military, government and water/sewage entities representing approximately three quarters of the public sector's electricity consumption.

[16] A.22-03-005, Application at 19 and citing to Exhibit 2

B. Programs

1. SDGE3267 - California Community College Partnership

Program Overview

The 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 CCC 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:

- 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
- Evaluation of new project technologies for suitability in the CCC market
- Planning and participation in CCC conferences and regional Campus Forums

Program Strategies and Outcomes

The CCC Partnership partook 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 CCC 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 management 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.

The Partnership expanded its reach to collaborate with the CEC to connect districts with the necessary resources to comply with the mandatory building energy benchmarking program under Assembly Bill 802 and maintain eligibility for future project funding from the recently passed Inflation Reduction Act. The team meets with representatives from the CEC and the Chancellor's Office to brainstorm, collaborate, and support opportunities monthly.

The CCC partners continue to perform virtual operations as projects recover from COVID-19 delays and adapt to new challenges. In addition, Proposition 39 funding ended, which provided funding to improve school facilities and lower energy costs, thereby creating a significant slowdown statewide for the identification of new energy efficiency projects. In 2022, CCC districts continued to focus on the complete utilization of any available funding. In early 2023, Governor Newsom approved a $840.7 million General Fund for deferred maintenance for community colleges. The funds are available for encumbrance or expenditure until June 30, 2027. The CCC Chancellor's Office is advocating for energy efficiency and sustainability projects using Scheduled Maintenance and Special Repairs (SMSR) funding to repair or replace existing HVAC equipment.

The CCC Partnership provided extensive outreach and technical support through virtual online formats 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 CCC energy efficiency projects statewide. Typical project types proposed were replacement of inefficient lighting with LED lighting, HVAC, controls, and RCx.

In addition, the CCC Partnership identified and prioritized the needs of the CCC districts and addressed them by providing outreach to districts. 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 and received positive feedback and appreciation throughout 2022. The PDF format highlighted links to these web resources, upcoming events, and 2021 award recipients. The newsletter also encouraged districts to utilize the CCC 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.

The third-party solicitation process for the Statewide Higher Education program progressed as planned during 2022. In Q3, 2022, the Partnership team met with the Statewide Higher Education program implementer to discuss outreach to engage the CCC districts to ensure a smooth transition to the new program. The outreach staff also facilitated introductions to key personnel at the districts. The new Statewide Higher Education program launched at the start of Q4, 2022, and the current CCC Partnership closed on December 31, 2022.

2. SDGE3268 - UC/CSU/Utility Partnership

Program Overview

The University of California (UC) / California State University (CSU) / Utility Energy Efficiency Partnership is a unique, statewide program which includes California's four investor-owned utilities, PG&E, SCE, SCG, and SDG&E, in partnership with UCs and CSUs. The program generates energy savings through the identification and implementation of energy efficiency projects. The UC/CSU/Utility Partnership consists of three main project types: retrofit, commissioning, and new construction. Since its establishment in 2004, the UC/CSU/IOU Partnership has provided approximately 69 MW of demand reduction and delivers approximately 503 million kWh/yr and 27 million therms/yr in energy savings. 2022 was the UC/CSU/Utility Partnership's final year.

Program Strategies and Outcomes

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 UC Office of the President and CSU 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.

Other successes include:

- Individual transition plans were established for UC and CSU and coordinated with individual utilities.
- The PAM worked closely with UC to determine how reporting needs will be addressed in the future without the support and data provided by the Partnership.
- The Management Team met with the new third-party implementer to offer insight into the offerings and operations provided by the Partnership.
- The PAM also drafted a report providing an overview of the Partnership and its successes over the past 19 years.
- Completed 15 Retrofit, RCx and New Construction projects at 5 different UC and CSU campuses.

The third-party solicitation process for the Statewide Higher Education program progressed as planned during 2022. The Partnership stopped accepting project applications in Q2. The new Statewide Higher Education program was launched at the start of Q4. The current UC/CSU/Utility Partnership closed on December 31, 2022 and legacy projects will be completed and closed according to individual enrollment guidelines and contracts.

At year-end, the UC/CSU/Utility Partnership made progress towards the 2022 program cycle goals, including 100% of kW goal. Additional 2022 projects are scheduled to close out and be paid in 2023.

3. SDGE4010 – Local Government

Program Overview

The Climate Action Plan for Zero Net Energy Program (CAP4ZNE) was approved on August 11, 2022, pursuant to Advice Letter 4025-E. The CAP4ZNE program provides a concierge approach tailored to the unique needs of each customer for energy efficiency and greenhouse gas reductions. This one-stop shop approach includes a comprehensive assessment of the customer's facilities for the Local Government segment within the SDG&E service territory. The Program offers

individual Partner Climate Action Paths tailored for participating Local Governments aimed at the customer's top energy-consuming facilities.

CAP4ZNE identifies and facilitates the implementation of energy efficiency upgrades for SDG&E's local government customers. Customers that install energy efficient systems and equipment will receive incentives based on the annual kWh or therm savings achieved, as well as on peak demand reductions (kW) and deemed incentive measures. The CAP4ZNE program is designed to work with decision makers directly, whether it be with local government officials, general managers, or facility personnel to:

- Identify if any climate action goals have been established;
- Gain a mutual understanding of how the CAP4ZNE program will help to reach set goals;
- Educate local government leaders on the benefit of establishing a climate action plan if none is in place with the development of a Partner Action Plan;
- Identify the greatest potential for energy efficiency and potential barriers that will need to be addressed for implementation.

Program Strategies and Outcomes

The AL was suspended in June 2022, and eventually approved on August 11, 2022. This delay impacted the program launch, eliminating the ability to produce energy efficiency projects and savings in 2022. As a result, a contract amendment was initiated in the fourth quarter of 2022 to shift the budget and savings from 2022 to 2023.

The CAP4ZNE program's Implementation Plan (IP) was successfully uploaded to CEDARS in October 2022, within the CPUC-mandated timeframe. The strategies for executing the program are:

- Empower leaders by equipping them with knowledge and tools to make informed decisions.
- Eliminate barriers to public sector participation by developing tailored solutions and financing options.
- Influence private sector participation through reach codes and engagement.

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

Program Overview

KEEP is a third-party program for public and charter schools. Savings are calculated using a population Normalized Metered Energy Consumption (NMEC) M&V approach. The program is implemented by California Retrofit Incorporated (CRI). A key feature of the KEEP program is the concierge service, which provides a single point of contact for all questions related to energy efficiency and sustainability.

Equipped with extensive data from prior Prop 39 school audits, the KEEP team created a list of turnkey measures across HVAC and lighting, which deliver measurable energy savings to schools at no cost. Additionally, the KEEP concierge is tasked with researching other more comprehensive energy efficiency opportunities commonly found in schools, such as pool heaters, pumps, and refrigeration. KEEP leverages On Bill Financing for eligible customers and assists OBF enrollment to enable implementation of measures for deeper energy savings.

Program Strategies and Outcomes

In 2022 the KEEP team focused on recruiting districts while also working to prepare for installations. Customer recruitment activities included an email campaign with telephone follow up to notify all districts of the program opportunities. The implementer also joined Cleantech San Diego to present the program offering to a panel of district energy supervisors. Recruitment efforts in 2022 were very successful, completing full scale energy audits of more than 55 schools. By the end of 2022, 51 schools have signed on and will be installing measures in the 2023 program year.

5. SDGE4012 – SD EnergyLink/Federal Energy Program (FEP)

Program Overview

The San Diego (SD) EnergyLink, formerly named Federal Energy Program (FEP),[17] provides 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), military bases, and tribal nations who are electric and gas customers on qualifying rate schedules. The program has two main segments –

[17] Program is implemented by TRC. Name change as of February 2, 2022, to SD EnergyLink.

Federal and Tribal and will further segment Federal into Federal and Department of Defense (DoD) for 2023 and beyond. This allows the program to better tailor services to these customers.

Energy savings were 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.

Program Strategies and Outcomes

Comprehensive outreach efforts ensured that customers who have historically participated in energy efficiency rebate and incentive programs did not miss out on opportunities to take advantage of new options in the marketplace.

Several key partnerships facilitated program success. The primary relationship is with SDG&E's Federal Turnkey team, who serve customers in the Federal and DoD segments. Regular meetings were established to discuss current and upcoming opportunities and utilized partnerships with all active Energy Services Companies (ESCOs). ESCOs generally operate under Energy Savings Performance Contracts (ESPCs) to service DoD customers, though the implementation of energy projects generally looks the same as with the Turnkey Team.

SD EnergyLink provided seamless integration from the former EEBI/EEBR programs and filled any gaps needed to perform technical aspects of project delivery. This happened by partnering with companies like Information Energy Specialist (IES), a mainstay in federal and DoD auditing, and kW Engineering to assist with NMEC preparation and analysis. There was integration with several other key subcontractors while striving to integrate Disadvantaged Business Enterprises (DBEs).

The program worked with customers and experienced trade allies to understand how to integrate federal contracting requirements into the CPUC custom project process. Tribal projects of larger magnitude typically require local facility managers to work on early analysis and feasibility, then bring their findings to council leadership for expenditure approval. SD EnergyLink assisted customers from ideation to implementation.

The program continued to develop a go-to-market strategy for residential and direct-install measures and used feedback from two test markets to guide strategy for 2023 as new measures become available and old measures no longer qualify.

SD EnergyLink successfully worked alongside its subcontractor, IES, on two large projects and utilized kW engineering on an NMEC project. The program has seen clearer identification of risks and rewards in each sector and achieved a fully staffed program. Relationships with the Turnkey team and several ESCOs have shown improvement on current projects and there are several additional projects on the horizon. One large military project is under review and two dozen custom lighting projects are underway.

SD EnergyLink's alliances span from partnerships with SDG&E's Turnkey Team, to federally approved ESCOs in addition to working with small business specialty contractors who employ small staff—demonstrating a capability to work with all manner of business entities. A vast majority of the consumption in this sector comes from large military customers, and the care in working with these customers is a high priority that we support by providing assistance and resources for incentive and rebate processing. Federal customers have UFC (United Federal Code) and California code requirements to reference and abide by when implementing energy projects. As a result, the team is adopting best practices in how these codes impact the utilization of specific measures; how to accurately assess energy savings; and how best to convey these insights to the reviewers and other stakeholders.

Tribal customers are exempt from Title 24 regulations, and this has presented some confusion among early project reviews. The program is also diligently working to convey code requirements and operating hour rule to the CPUC Custom Review Team. Additionally, government customers are showing a need for a special set of contracting terms and conditions, adding risk to project implementation. Other customers have demonstrated a need for tailored program language, which has added significant program resources.

The program has also dealt with supply chain challenges and long lead-times for procuring equipment. Items originally scoped in the Project Feasibility Summary (PFS) are sometimes delayed or unavailable, requiring significant re-work of the PFS and causing delays with the notice proceed (NTP), which is required before equipment can be procured. Furthermore, contractors hired to execute the project may incur additional costs or be subject to contract breaches if they must wait for an NTP, resulting in a misalignment between the custom project process and real-world construction practices.

Additionally, progress in the Tribal sector, led by strong outreach efforts, created several opportunities in 2022 and early 2023. The program has existing projects and potential leads with several local casinos with potential measures ranging from retro commissioning to pool pumps. Tribal customers appear motivated to reduce their footprint and save money on energy projects. The implementer is learning the nuances of working with the different entities on Tribal lands and hopes to continue gaining market knowledge while building rapport with each customer for years to come. It is anticipated that the early success with casinos will cascade into other areas on other reservations and continue to drive the offering for all Tribal customers in the territory.

VIII. RESIDENTIAL PROGRAMS

A. Overview of Residential Sector

Residential customers consume over a third of all electricity and over half of all-natural gas in San Diego County. Residential customers consume 34 percent of total electric consumption and account for 13 percent of the electric EE savings. More specifically, the single-family homeowner segment consumes the most electricity and gas, while multifamily owners consume the least, and thus are a critical component in SDG&E's plans to meet Senate Bill (SB) 350's objective of doubling energy efficiency savings.

SDG&E has categorized its residential accounts by number of units and ownership status, which yields four customer segments: single family owners, single family renters, multifamily owners, and multifamily renters. The majority of SDG&E's residential customers are single family owners (46 percent) and multifamily renters (28 percent).

B. Programs

1. SDGE3201 – Universal Audit Tool (UAT)

Program Overview

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 2022, the Energy Advisor Program continued to help both IOU and Community Choice Aggregation (CCA) customers understand their energy use through various tools and educational opportunities. The program utilizes behavioral outreach initiatives and interactive tools designed to engage and encourage customers to reduce their energy consumption through program recommendations, and as warranted, IDSM opportunities. Additional tools 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.

Program Strategies and Outcomes

In 2022, 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 many residential customers. Implemented strategies included:

- Promotion modules ran in over 1.76 million impressions
- Used QR codes in promotion modules in print HER to drive customers to complete the home audit
- Added marketing module on HER digital reports
- Included appliance disaggregated insights on HERs and targeted tips to show customers top opportunities to manage their energy use and encourage them to complete their home audit.
- Enhanced the web portal further with advanced appliance disaggregation insights

Marketing efforts noted above resulted in more than 10,000 customers visiting the home energy audit tool and 90% of those who started the audit, completed it. The introduction of QR code on the HER made it easier for customers to access the home energy audit. The program provided an enhanced customer experience by including appliance disaggregation insights in all channels email, print and web. Additionally, email HERs demonstrated high levels of engagement with open rates (greater than 50%).

Program year 2022 continued to drive customers to complete their energy audit by launching enhanced experiences for solar and EV charging customers. For customers enrolled in CCA, 2022 posed challenges related to maintaining a seamless customer experience for their Home Energy Reports and web portal information. These challenges led to minor portal inconsistencies; however, the program was able to identify the problem and implement a solution and customers only experienced a slight delay.

2. SDGE3261 – Home Energy Report (HER)

Program Overview

The purpose of the Local-IDSM-ME&O Behavioral (or HER) program is to increase customer awareness of their energy use and motivate them to take actions, which may 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 a 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 energy use over time.
- Energy efficiency and demand response recommendations comprised of tips and program promotions.

The HER 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 by using behavioral components such as feedback, social approval and goal setting.

Program Strategies and Outcomes

The HER program averaged approximately 700,000 residential report recipients in 2022. Program results include electricity and natural gas savings and serve as an entry point to additional services, including an online audit. Key activities from 2022 include:

- Launched HER 3.0 to more customers
- Included QR code in print HERs to make home energy audit easier to access
- Promoted SDG&E's Community Tree Rebate program in HERs
- Included appliance disaggregated insights on HERs and targeted tips to show customers top opportunities to manage their energy use
- Enhanced the web portal further with advanced appliance disaggregation insights
- Continued to send Weekly AMI email reports to participating customers to inform them of their energy usage patterns
- BDR
    - Over 200,000 participants in the BDR program
    - Sent email welcome letters to introduce ELRP and BDR program

- Supported ELRP with seven events by sending pre-event and post-event emails
- Measurable peak savings observed during Power Saver Reward days

During 2022, the program sent more than 1.76 million data usage insight communications to residential customers. The program supported the new Power Saver Rewards (PSR) program, in conjunction with ELRP, by sending more than 3 million BDR communications to reduce peak load during event days. Additionally, the print HERs now include a QR code to drive customers to web and engage with home energy audits. Lastly, communications demonstrated high levels of engagement with open rates (greater than 50%) and opt-out rates as low as 1%.

Changes for 2022 included efforts to launch an enhanced customer experience for solar customer and EV charging customers that will focus on their specific demands that come with owning solar and/or an EV. Once these have been completed, they will be implemented in 2023.

The primary challenge in 2022 was maintaining a seamless web and HER experience for customers enrolled in CCA. During this migration to CCA, the program experienced challenges with interval billing information, customer portal display issues and short delays in HER delivery. These issues were eventually resolved. Partially due to these challenges the program did fall short of forecasted savings for kWh and therms for the year.

3. SDGE4001 – Single Family

Program Overview

SDG&E's Residential Single-Family Program Contract Advice Letter 4027-E was approved on July 19, 2022 and effective August 1, 2022. The field implementation name of the program is the Residential Energy Solutions (RES) program.

The SDG&E RES program is a Zero Net Energy (ZNE)-focused residential resource single-family program. The ZNE path begins with installing persistent cost-effective direct install measures that transition the customer into complimentary home energy surveys/sales consultations for higher levels of energy efficiency and renewable technologies that can potentially be financed by the participant and installed by the implementer.

The RES program also presents opportunities annually to integrate energy efficiency and demand response in the single-family market segment. These opportunities originate from the direct installation of smart thermostats with required demand response enrollment. Over time, a valuable demand response resource is constructed through individual enrollment and provisioning of smart

thermostats. This demand response resource is ready to assist SDG&E during summer peak demand periods to maintain grid reliability and prevent customer power disruptions.

Program Strategies and Outcomes

The RES program strategies included:

- Maximizing energy savings;
- Forging the pathway to zero net energy;
- Constructing a demand response resource; and
- Developing cost-effective measure packages for ongoing program success.

The RES program experienced an expedited program ramp-up to launch the program before the end of 2022. These activities included:

- Filing of the Implementation Plan and webinar
- Weekly program strategy meetings
- Program configuration
- Program website creation
- Marketing efforts
- 3P Implementer Training

All required cyber security, California Consumer Privacy Act, data tracking requirements were fulfilled during 2022 allowing for successful and expeditious program recruitment, program/demand response enrollment, and installations in December 2022. This work positioned the program well for success in 2023 and future years.

To maximize energy savings, the RES program was integrated into the monthly SDG&E technical review meetings where measure package development is advanced, and savings updates are reviewed. These meetings provided valuable insights and knowledge for current implementation of measures to maximize energy savings. They also are an important ongoing platform for development of new measures and revisions of current measures for future implementation.

The single-family market sector is a new frontier for direct installation programs in the SDG&E territory. It will take time for the program implementer to establish credibility and trust with the market segment presenting a challenge for program adoption. Marketing efforts in 2023 will

include a program website, public service announcement, press release, and utility branded marketing pieces aim to overcome that challenge.

4. SDGE4002 – Multifamily

Program Overview

The RZNET program is an innovative way of serving multifamily and manufactured homes with zero net energy in mind. The 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.

Program Strategies and Outcomes

The program strategies implemented in 2022 included maximizing energy savings, serving as the pathway to zero net energy, and developing energy efficiency measure packages. Energy efficiency measure package development is a vital piece to a resource program's health and success. In 2022, SDG&E continued to make energy efficiency program measure development 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 engineering team to discuss measure package development and the proper implementation of approved program measure packages. 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 and the current 2022 net therms and TRC goals. Going into 2023, the implementer and SDG&E will continue the ongoing measure package development of water energy nexus measures.

In 2022, the program continued to prove that it is not only 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 significant 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.

The RZNET program exceeded the goal TRC of 1.25. The entire allocated budget of the program was utilized, and thousands of multi-family customers enjoy 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 SDG&E's inspection staff completing many of the pending program inspections that they could not have otherwise done without this program enhancement. Geotagged timestamped photos provide assurance that program measures reported are installed and they allow for SDG&E inspectors to review program projects virtually thus improving the efficiency, health, and safety of program operations. The implementer successfully leveraged RZNET energy efficiency installations with the San Diego County Water Authority (SDCWA) water conservation measure offerings.

SDCWA executed a professional services contract with the implementer for program services commencing at the beginning of 2022. The scope of services of this contract includes the direct installation of high-efficiency toilets for multifamily units in disadvantaged communities and the direct installation of high-efficiency toilets for all manufactured homes. Throughout 2022, the implementer successfully combined RZNET energy efficiency installations with the installation of SDCWA high-efficiency toilets for SDG&E RZNET customers. Providing both programs simultaneously resulted in fewer customer touches, a reduced carbon footprint delivery, and increased customer satisfaction. In 2022, SDG&E and the program implementer collaborated on the development of water-energy-nexus measure packages for high-efficiency toilets and other water saving measures, which when approved, will allow the program to claim the embedded electrical energy saved the reduction of water use.

2023 will see the retirement of the tub spout diverter valve with thermostatic shutoff showerhead. The measure was not installed in 2022 due to its lack of cost-effectiveness.

The RZNET program may experience saturation challenges in 2023, however there are some encouraging measure package updates for the duct test and seal, brushless fan motor, and electronic fan controller that may allow for the cost-effective installations of these measures in the multifamily sector in 2023.

IX. CROSS-CUTTING PROGRAMS

A. Overview of Cross-Cutting Sector

The Cross-Cutting sector includes: Finance, Workforce Education & Training, Codes & Standards and Emerging Technologies

B. Programs

1. SDGE3251 - Compliance Enhancement

Program Overview

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.

Program Strategies and Outcomes

Throughout 2022, 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, the 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 specifically reflects what key market actors told the CE subprogram what they want and need to improve compliance on building and appliance standards. These tools were designed and completed in close collaboration with, and approval by, the CEC staff.

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, electrification, and ZNE goals, there will be an opportunity for additional stakeholders to be educated in a changing renovation and construction landscape. The CE subprogram continues 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 SB 350 (CEC's Doubling Energy Efficiency Savings) and ZNE[18] for multifamily, mixed-use buildings, and commercial new construction and retrofits goals.

Training

In response to the COVID-19 pandemic, the CE subprogram website - EnergyCodeAce™ (website for trainings, tools, and resources) has maintained the trainings through virtual, hybrid, and in person learning environments for stakeholder groups in the SDG&E service area. In 2022, the CE subprogram sent out ongoing, targeted email messages to registered EnergyCodeAce website users promoting trainings and other offerings across California. In coordination with the other IOU CE subprogram teams, the team facilitated delivery of 242 virtual classes to 7,292 students with 765 training attendees from SDG&E's service area. The CE subprogram through EnergyCodeAce achieved a 24% knowledge uptake after being evaluated.

Website

In 2022, the CE subprogram updated existing 2019 Title, Part 6 training curriculum, tools, and resources to the new 2022 Title 24 – Part 6 code requirements and added new courses on the new multifamily requirements. The CE subprogram funded technical subject matter experts to advise on the update to the curriculum, tools, and resources. The CE subprogram website training, tools, and resources landing page was restructured with new menus and navigation for streamlined user and stakeholder interaction. The CE subprogram launched a new video series on how to use the new "Virtual Compliance Assistant" and how to model heat pump water heaters on the EnergyCodeAce YouTube channel. The CE subprogram also launched the new "Collections"

[18] California Long Term Energy Efficiency Strategic Plan (January 2011 update) at Section 1 – Page 6, '"Big Bold' Energy Efficiency Strategies" state, "In order to guide market transformation in a number of key sectors, this Plan embraces four specific programmatic goals, known as the 'Big Bold Energy Efficiency Strategies' (BBEES), established by the CPUC in D.07-10-032 and D.07-12-051.These goals were selected not only for their potential impact, but also for their easy comprehension and their ability to galvanize market players." Goal 2: "All new commercial construction in California will be zero net energy by 2030."

feature which groups EnergyCodeAce.com content into roles and code subjects for stakeholders to easily find the information they are looking for on the website. The number of EnergyCodeAce website users climbed to 20,064 which was 34% over the 2021 number of users. The EnergyCodeAce Twitter social media site grew from 35 followers in 2021 to 130 followers in 2022 (271% growth) with 16,800 total impressions (number of people reviewing posts, commenting, or engaging with social media posts). The EnergyCodeAce LinkedIn social media site grew the followers from 99 in 2021 to 227 in 2022 (129% growth) with 32,965 impressions. The EnergyCodeAce YouTube closed 2022 with 866 subscribers.

Outreach

The CE subprogram outreach efforts using EnergyCodeAce offerings (trainings, tools, and resources) transitioned back to in-person conferences in early 2022 as COVID-19 restrictions were reduced. At these conferences, CE subprogram teams increased emphasis on providing targeted outreach and was able to attend 36 industry conferences reaching a broad range of building and appliance efficiency compliance stakeholders including: HVAC contractors, builders, designers, architects, energy consultants, solar professionals, green building professionals, commercial and industrial fan manufacturers, lighting designers and installers, healthcare professionals, landscape industry, and pool and spa industry. Of the 36 industry conferences, 23 of them occurred in Southern California, where the CE subprogram staffed 50 active EnergyCodeAce booth event days conducting outreach to key market actors.

The CE subprogram team designed targeted local communications to individual market actors that are key audiences for EnergyCodeAce trainings, tools, and resources. This included emails, phone calls, and newsletters to HVAC contractors, architects, production builders, electricians, engineering firms, manufacturers, distributors, retailers, environmental groups, and industry organizations. The CE subprogram team also strengthened strategic partnerships with key industry organizations and stakeholders including: the International Code Council – San Diego Chapter, 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, Casita Coalition, San Diego Building Electrification Coalition, Urban Land Institute – San Diego/Tijuana Chapter, Plumbing Heating Cooling Contractors – San Diego, and local jurisdiction staff (building officials, plans examiners, building inspectors, and permit technicians) in order to provide their members and stakeholders with all of the EnergyCodeAce training, tools, and resources.

The CE subprogram team attended 19 local networking events for industry organizations including American Institute of Architects – San Diego Chapter, Building Industry Associations – San Diego, Plumbing Heating Cooling Contractors – San Diego, San Diego Green Building Council, Casita Coalition, San Diego Building Electrification Coalition, and Urban Land Institute – San Diego/Tijuana Chapter. Also, at a local level in coordination with the Reach Codes and 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 2022.

To draw more participants into training classes, the CE subprogram emphasized the series of 30 to 90-minute live webinars called "Code Breakers" and customized trade-specific trainings designed to bring critical Energy Code information to industry organization chapters. The "Code Breakers" topics were selected to help support decarbonization and encourage the move toward all-electric buildings, including photovoltaics and battery storage, non-residential mechanical systems, single family all-electric, multifamily all electric, non-residential all electric, and accessory dwelling units (ADUs).

Resources

The CE subprogram developed multiple new resources to support the education of market actors. The CE subprogram developed a series of 2022 Title 24, Part 6 "What's Changed" and "What's New" fact sheets for each building type (single family, multifamily, non-residential) which were distributed on the EnergyCodeAce website, at industry events, trade shows, and conferences. The CE subprogram developed and distributed a focused brochure on EnergyCodeAce building electrification offerings to multiple stakeholders due to market demand for a better understanding on the 2022 Title 24 – Part 6 electrification code requirements for electrification solutions (solar, battery, heat pumps, EVs, and panel upgrades). Additionally, brochures on subprogram offerings were developed for key industry stakeholders (Architects & Designers, Building Departments, Lighting Industry, HVAC Industry). The CE subprogram also updated the Title 20 Appliance Standards resources in collaboration with the CEC staff.

Tools

The CE subprogram designed the Virtual Compliance Assistant (VCA) where compliance forms can be completed, verified for compliance, and downloaded for inclusion in construction documents for the 2022 Title 24 – Part 6 requirements. In 2022, the CE subprogram maintained the web-based EnergyCodeAce Reference Ace tool allowing users to navigate directly to the CEC 2019 Title 24 – Part 6 code language (effective through 12/31/2022) while developing the new

Reference Ace tool for updates to the 2022 Title 24 – Part 6 code language (effective 1/1/2023 – 12/31/2025). The Statewide CE subprogram also updated the Forms Ace website which helps users understand which new 2022 Title 24 – Part 6 forms apply to their specific construction project. Updates were also made to the Image Ace tool that contains an image library that illustrates concepts and technologies to meet 2022 Title 24 – Part 6 requirements. Additionally, the EnergyCodeAce "Product Finder" is an interactive tool which allows users to identify what products and technologies are included in the 2022 Title 24 – Part 6 update.

2. SDGE3252 – Reach Codes

Program Overview

In addition to state and national building codes, the C&S program provides technical support and stakeholder outreach and education to local governments that wish to adopt local energy ordinances (reach codes) that exceed statewide Title 24 minimum EE, PV, storage, EV, and DER requirements for new buildings, additions, or alterations. The Reach Code (RC) subprogram 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 facilitate adoption and encourage regional consistency, assistance for completing and expediting the application process required for approval by the CEC, and supporting implementation once effective through trainings, tools, and resources.

Program Strategies and Outcomes

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 the goals. Reducing GHG emissions is these jurisdictions' highest priority, which has caused 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 Title 24 – Part 6 Building 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. This code was in effect until December 31, 2022. 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 only;
- 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.

Maintaining that trajectory, the 2022 Title 24 – Part 6 Building Energy Code (adopted August 2021) goes one step further and provides a compliance credit for all-electric projects. Adoption momentum across CA remained strong in 2022 with approximately 50 jurisdictions adopting a reach code to go beyond the 2022 Title 24 Part 6 Building Energy Code and Part 11 - CALGreen. Although most ordinances included exceptions for certain occupancies or technologies, there is a trend amongst many jurisdictions to begin reducing the number and scope of exceptions, moving toward disallowing gas in all new construction. In late 2021, the CEC determined that if an ordinance was limited to requiring only electric equipment, it was not an energy conservation ordinance and thus, not required to obtain CEC approval. An all-electric ordinance may be structured as an amendment to Title 24, Part 11 or to the local municipal health and safety code prohibiting new natural gas infrastructure. Some jurisdictions require that projects receiving an exception to the all-electric requirement install infrastructure to enable future conversion to electric equipment.

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, water conservation, or requiring photovoltaic systems on non-residential projects. In addition, some SDG&E local jurisdictions adopted reach codes accelerating the requirements for installing electric vehicle infrastructure and electric vehicle supply equipment (EVSE) in new buildings.

For technical support of local jurisdictions, the RC subprogram presented cost-effectiveness studies, consulted on options and opportunities for ordinance development, created a checklist for permit applicants, and reviewed and made recommendations on proposed ordinance structure, triggers, and language. For implementation solutions, the RC subprogram has created specific trainings, tools, videos, and resources for multiple jurisdictions.

In 2022, the 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 its 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 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 scaled up efforts to deliver more trainings, tools, and resources to a growing number of jurisdictions looking to pursue reach codes.

When the 2019 Title 24 – Part 6 Building Energy Code became effective on January 1, 2022, multiple jurisdictions showed interest in pursuing reach codes. Throughout 2022, work to support the jurisdictions pursuing reach codes included analysis and report development, technical support, reach code resource accessibility improvements, and other activities. RC subprogram activities fall into three main categories: 1) Direct technical support – including cost-effectiveness studies, model language, checklists, fact sheets, implementation resources, and the Cost-effectiveness Explorer Tool, and 2) Resources, Communications and Events – including the LocalEnergyCodes.com website, News Briefs, Frontrunners articles, conference support, tools, and educational webinars for pre- and post-adoption.

Direct Technical Support

Cost-effectiveness Studies:

The Reach Code subprogram completed several new cost-effectiveness studies in 2022, including wrapping up studies initiated in 2021 and beginning new studies in support of the 2022 code cycle. Three studies – Restaurants (including Commercial Kitchen Equipment), Low-Rise Multifamily Retrofits and Electrification, and Non-Residential Retrofits and Electrification, which support ordinances referencing both the 2019 (effective 2020-2022) and 2022 (effective 2023-2025) Title 24 – Part 6 code cycles – were initiated in 2021 and completed in 2022. Due to the 2022 California drought, the team also initiated two studies focused on water efficiency and savings. Approved local ordinances may be found on the LocalEnergyCodes.com and CEC websites.[19] As the cost-effectiveness studies tend to be very technical documents, the Reach Code team recognized the need for more concise results that staff can distribute during their outreach and community activities and prepared stand-alone executive summary documents released with each cost-effectiveness study.

[19] California Energy Commission, Local Ordinances Exceeding the 2022 Energy Code, *available at* https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-2.

Technical Support Resources and Materials:

In addition to developing new cost-effectiveness reports, the RC subprogram collaborated with other organizations that support reach code adoption to create supplemental supporting documents. In 2022, the RC subprogram began updating all subprogram resources for the 2022 Title 24 – Part 6 and Part 11 code cycles and added several new materials to its suite of existing support resources. Examples of general technical support include:

- Drafted Model Ordinance Language, City Staff reports, ordinance checklists, and other resources targeting retrofit projects.
- Fact Sheets summarizing various aspects of the code requirements including 2022 Single Family Cost Effectiveness Study and CALGreen Voluntary Tiers, Flexible Path Fact Sheet, and others.
- CALGreen Fact Sheets summarizing various aspects of the code requirements including 2022 Electric Vehicles Requirements, 2022 Accessory Dwelling Unit Requirements, and 2022 Water requirements.
- Ordinance language review and technical support for the following cities and county: Del Mar, Solana Beach, Carlsbad, San Diego, Chula Vista, and Encinitas, and County of San Diego. This included reviewing and analyzing ordinance language components of new construction, existing buildings, and ordinance exceptions to inform their reach code development and implementation.
- Support to jurisdictions through the RC subprogram's interactive web tool "Cost Effectiveness Explorer" which assists staff and policy teams to make informed decisions based on cost effectiveness for homes and buildings within their jurisdictional boundaries.
- Supported to local jurisdictions on their existing buildings ordinances and policies implementation strategies including the City of San Diego's – Zero Emissions Municipal Buildings Policy and the City of Chula Vista's Benchmarking Ordinance.
- Developing resources for tracking water reach code and water agency incentive programs for jurisdictions and market actors.

Examples of customized support include:

- Supporting and presenting reach code educational and technical materials to staff, commissions, and committees for the following cities: Escondido, Oceanside, Carlsbad, Encinitas, Solana Beach, Del Mar, San Diego, La Mesa, and Chula Vista.

- Presenting educational and technical materials to regional organizations and other groups including the International Code Council - San Diego Chapter and San Diego Building Electrification Coalition.
- Supported the "North County Regional – Reach Codes Collaborative" (Cities: Oceanside, Carlsbad, Encinitas, Solana Beach, Del Mar) through reach codes education, technical analysis, and coordinating measure review.
- Updating Reach Codes Fact Sheets and Compliance Checklists for the City of Encinitas to assist in the implementation of their reach codes.
- Creating customized jurisdiction-specific public facing videos, web site content, and other custom resources for the Cities of Encinitas, Carlsbad, and Chula Vista to support compliance with adopted ordinances.

Cost-Effectiveness Explorer

The Title 24 – Part 6 Building Energy Code and Part 11 – CALGreen Code are complex codes and evolve with every triennial (3 year) update. The economic and technical analyses may be difficult to understand for city or county staff adopting a reach code. Although the cost-effectiveness studies are required for CEC approval and provide all data sorted by climate zone, it can still be challenging to identify the appropriate data for an individual jurisdiction. The Cost-Effectiveness Explorer located on the LocalEnergyCodes.com website simplifies the process for staff, allowing them to easily select and view only the jurisdiction's relevant results for policy options of interest.

The RC subprogram continued developing and expanding the Explorer tool capabilities, which included:

- Existing Non-residential buildings: obtained and added existing non-residential building stock data by vintage to the tool allowing users to view results at either a single building level or jurisdiction wide.
- Added subsides to the single-family cost-effectiveness analysis so that jurisdictions can choose to add them.
- 2022 Study Data: Updated the database to accommodate 2022 results and added data from single family new construction cost-effectiveness analysis to the tool. Custom analysis data reflecting local utility rates was also added.

The RC subprogram continued to develop the "Flexible Path" in the Cost-Effectiveness Explorer to allow users to target performance measure or groups of measures specifications for new construction or existing buildings based on potential energy savings. Users can now save, share, and download these policy specifications and the associated model ordinance language to facilitate outreach and final policy development.

Education, Communication, and Events

LocalEnergyCodes.com Website

Local interest in reach codes continued to maintain momentum throughout 2022, fueled by the desire to decarbonize the building and transportation sectors. To support improved outreach efforts and remain a trusted resource in this growing area, the RC subprogram continues to maintain and update the subprogram's web site. The 2019 Title 24 – Part 6 code cycle reach code materials continue to be updated to reflect the 2022 Title 24 – Part 6 code cycle materials. From April – December 2022, the website's home page was viewed 22,903 times. In 2022, website membership grew approximately 7% from 429 to 461 subscribers.

The "Local Ordinance Map" on the website is an interactive map of CA that highlights jurisdictions that have adopted ordinances, allowing users to search either geographically or by using filters to focus on specific ordinance types. At the jurisdictional level, the map provides a summary of the ordinance scope and requirements. Users can download the ordinance and staff report presented at the public adoption meeting, and link directly to the relevant section of the municipal code. The "Local Ordinance Map" consistently garnered an average of 450 views per month throughout the year. In 2022, the team added a new "Adopted Ordinances" web page which is an expansion of the matrix summarizing ordinance requirements. The new page allows users to view and search all adopted ordinances, as well as download the list in matrix format. From April - December 2022, the "Adopted Ordinances" page was viewed around 1,600 times, with more than 800 downloads.

Reach Codes News Brief

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 offered insight into the rapidly evolving reach code landscape and highlights jurisdictions that are leading the way. The number of subscribers to the News Brief continued to grow steadily, achieving 7% increase in 2022 (from 429 to 461). On average, 448 subscribers received the newsletters each month, 37% of the emails were opened with a click-through rate of 6%, and a click-to-open rate of 16%.

Reach Code Social Media

The team continues to develop and expand its social media presence, and now maintains Twitter and LinkedIn accounts to which it posts content two to three times weekly. In addition, the CA Local Energy Codes team initiated a YouTube channel that showcases recordings of reach codes webinars.

At year-end, the CA Local Energy Codes social media presence includes:

Twitter: CA Local Energy Codes, Following 211, Followers 133.

YouTube: Local Energy Codes - 15 Subscribers, 10 videos.

LinkedIn: Local Energy Codes - 65 followers.

Reach Codes Conferences and Events

The RC subprogram presented and participated in six conferences, held ten technical webinars, and participated in one podcast in 2022. Events were a mix of in-person and remotely hosted sessions.

Reach Codes Presentations at Conferences

California Association of Building Energy Consultants (CABEC)

- March 2022 - Temecula, CA - 2022 Conference, "Energy Pivot: Decarbonizing Buildings". Attended conference and hosted a Reach Codes Panel session, in collaboration with CEC, discussing adoption activities in the 2019 code cycle, and trends developing for the 2022 cycle.

County Building Officials Annual Conference (CBOAC)

- April 2022 - Yosemite, CA - Attended conference and presented session entitled "Reach Codes for All-Electric Buildings".

Municipal Green Building Conference (MyGBCE)

- May 2022 - Los Angeles, CA – the RC subprogram attended the hybrid format conference remotely and presented session entitled "How Flexible Path Reach Codes

Can Help Communities Tackle Climate Action and Equity Goals" with City of Palm Springs.

Passive House Network (PHN)

- June 2022 - Boston, MA - RC subprogram staff attended the PHN conference and participated in speaker panel entitled "The Power of Efficiency".

American Council for an Energy Efficient Economy (ACEEE) Summer Study

- August 2022 - Asilomar, CA – The RC subprogram presented paper entitled "Taking Down Barriers – How an Innovative Solution is Enabling Cities and Utilities to Jointly Decarbonize Existing Homes", summarizing pilot project with City of San Luis Obispo.

2022 California Climate & Energy Collaborative (CCEC) Forum

- September 2022 - San Diego, CA. The RC subprogram sponsored the conference and attended to present panel entitled "Going Beyond 2022 Building Standards to Continue Accelerated Climate Action" with CEC, City of Encinitas, Monterey County and Building Decarbonization Coalition.

Reach Codes Subprogram Events

- *CA Reach Codes Team – Monthly Meeting* - Hosted monthly reach codes coordination meeting attended by local jurisdictions, regional organizations including RENs, CCAs, and staff from CEC and CARB, average 41 attendees, approximately 35% more compared to the 2021 average of 30 attendees.
- *Webinar Series: Reach Codes Newcomers Series (Five Sessions)* - Following a request for additional support from jurisdictions new to the reach codes process, the RC subprogram reached out to BayREN, CCEC and Building Decarbonization Coalition (BDC) to collaboratively develop and host this series of webinars. The webinars garnered more than 300 unique registrants and averaged 95 participants in each session.
    - January 2022, Session 1: Introduction to Reach Codes, 119 participants
    - February 2022, Session 2: Reach Codes Process and Timings, 94 participants
    - March 2022, Session 3: Cost-effectiveness Analyses, 98 participants
    - April 2022, Session 4: Reach Code Ordinance Options, 99 participants

- September 2022, Session 5: Implementation, 64 participants

Since web site tracking and reporting was updated in April 2022, the webinar pages have been viewed 716 times, presentations and recordings have been downloaded from the site 177 times with 80 views on the Local Energy Codes YouTube channel.

- *Additional Webinars for Stakeholders –*
  - Webinar, January 2022: Designing Flexible Path Reach Codes with the Cost-Effectiveness Explorer
  - Webinar, May 2022: Results & Findings: Single Family New Construction Cost-Effectiveness Study
  - Webinar, May 2022: Draft Results: Non-Residential New Construction Cost-Effectiveness Study
  - Webinar, July 2022: Draft Results: Multifamily New Construction Cost-Effectiveness Study
  - Webinar, August 2022: Designing Local Policies with the Cost-Effectiveness Explorer
- *Cross Promotion* - The RC subprogram also promoted webinars, trainings and conferences hosted by others throughout the year, including advertising events in the news brief, posting Energy Updates on the LocalEnergyCodes.com home page, and advertised more than 60 external events on the LocalEnergyCodes.com Events page.

Local SDG&E Reach Codes Educational Videos

- City of Chula Vista – The RC subprogram developed and produced six education videos from the City of Chula Vista's Energy Benchmarking Ordinance featuring the following videos: "Energy Benchmarking Ordinance Overview", "How to Energy Benchmark Online", "Energy Benchmarking for Multifamily Buildings", "Energy Benchmarking for Multi-Tenant Commercial Buildings", "Chula Vista's Energy Benchmarking Dashboard", and "Energy Benchmarking Short Summary".
- City of Encinitas – The RC subprogram has begun development of several educational videos for the City of Encinitas recently adopted "Green Building Ordinance" which includes photovoltaic, all-electric, electric vehicle, water, and energy efficiency measures for new construction, retrofits, and existing buildings. The video development work in 2022 included video storyboards, filming location siting, and content creation in collaboration with City Staff.

- City of Carlsbad – The RC subprogram has begun development of several educational videos for the City of Carlsbad's adopted "Energy Reach Codes" which includes photovoltaic, alternative water heating, electric vehicle, and energy efficiency measures for new construction, retrofits, and existing buildings. The video development work in 2022 included video storyboards, filming location siting, and content creation in collaboration with City Staff. This ordinance was featured as a Frontrunner on the Local Energy Codes site.

3. SDGE3253 – Planning and Coordination

Program Overview

The planning element of this Planning and Coordination (PC) 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; 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.

Program Strategies and Outcomes

The integrated PC subprogram approach 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.

With the absence of a formal Codes and Standards ZNE or decarbonization subprogram, the C&S PC 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 and decarbonization goals. The ZNE effort is not limited to Title 24; it also supports the California Department of General Services' ZNE and decarbonization goals, and the design and construction industry's efforts to meet the various ZNE goals.

The PC subprogram completed the following deliverables in 2022:

- The PC subprogram presented the "Embodied Carbon: Deeper Decarbonization of the Built Environment" with 598 attendees participating. Additionally, the PC subprogram presented to the CEC, BSC, and DSA on recommendations on how to integrate embodied carbon into multiple parts of the Title 24 Building Code.

- The PC subprogram 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 four ZNE and decarbonization factsheets including: "Electric Vehicle – Advanced Load Management" Fact Sheets (101 and 102)," "Refrigerants Fact Sheet", and "Embodied Carbon Fact Sheet".

- Developed and launched the "Energy Education and Resource Hub for the San Diego Region" which was designed to target the local governments, Port of San Diego, San Diego International Airport, SANDAG (San Diego Association of Governments), and other key local agency stakeholders. The site gives quick access to energy code trainings and workshops (CE subprogram), Title 24 Part 6 resources (CE subprogram), reach codes resources (RC subprogram), ZNE and decarbonization resources (PC subprogram), and a selection of regional Case Studies to showcase high profile ZNE and decarbonization projects in the San

Diego Region. This website is part of the ongoing work with the "San Diego Regional Climate Collaborative" to achieve GHG climate goals.

- The PC subprogram began the development of fact sheets to educate all market stakeholders in understanding the code requirements and benefit of electrification end-uses including heat pump water heaters, heat pump air conditioners, electric induction cooktops, heat pump dryers, and commercial electric cooking technologies. These fact sheets will also include references to rebate, incentive, and financing programs that are available to align the code requirements with funding sources.

In response to a request from CARB and Energy Division, the PC subprogram continues to support the development of recommendations to update the electric vehicle infrastructure and electric vehicle supply equipment (EVSE) requirements in 2022 Title 24 Part 11 – CALGreen Code for the Interim Code Cycle (effective 7/1/2024) using the CASE report methodology, including cost/benefit analysis. The PC team coordinated with clean transportation team members within SDG&E, and with staff from SCE and PG&E. The work involved analysis 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. This IOU analysis was developed to support CARB's request for enhancements to the electric vehicle infrastructure and EVSE requirements in 2022 Title 24 Part 11 – CALGreen Code to the California Building Standards Commission (BSC) and California's Housing and Community Development (HCD). The Planning & Coordination subprogram also coordinated research and market analysis for a presentation in January 2022 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.

The planning and coordination activities require a strong ability to develop, manage and deliver codes and standards strategies to meet the ZNE and decarbonization goals in the future years. This PC 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.

Emerging Technologies Programs

SDG&E's cross-cutting programs are being implemented in the context of the recently launched third-party statewide ET programs – ETP-EE-Gas in October 2021 and ETP-EE-Electric in April 2022. During the transition to these new statewide programs, SDG&E did not initiate any new,

locally led ET projects. SDG&E will instead focus on completing the remaining projects initiated in previous years and funded with the budget approved through 2022.

4. SDGE3246 - Technology Introduction Support

Program Overview

The Technology Introduction Support (TIS) subprogram supports the introduction of new technologies to the market, on a limited scale, through several activities. In the past, these activities included Scaled Field Placement (SFP) projects, Demonstration and Showcase (D&S) projects, market and behavioral studies, and knowledge dissemination and outreach, amongst others. As a direct implementation approach, 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. D&S projects introduce measures at a systems level to stakeholders 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. With the launch of the third-party implemented Statewide ET programs for both natural gas and electricity, the activity types used by the TIS program are also undergoing transition. The TIS program is shifting focus from direct implementation to support of the Statewide ET programs, which will implement similar activities coordinated across California IOUs.

Knowledge dissemination and outreach are strategies have been used both for locally led ET projects and in support of the Statewide ET programs, and include engagement with key stakeholders and groups, such as California's Emerging Technologies Coordinating Council (ETCC), amongst others. This facilitates sharing of past project information, current areas of stakeholder interest, research gaps, and technical needs with other engaged stakeholders and helps advance knowledge and collaboration.

Program Strategies and Outcomes

SDG&E's ETP implemented several strategies in pursuit of its goals for the TIS subprogram in 2022. The ETP scanned for nascent and emerging technologies from a wide variety of sources – CEC EPIC (Electric Program Investment Charge) Program, ETCC Summit, industry groups, Electric Power Research Institute (EPRI), Consortium for Energy Efficiency (CEE), GTI Energy

(formerly Gas Technology Institute), and Cleantech San Diego, among others – while coordinating closely with other Statewide ET stakeholders, internal EE Program advisors, and engineering staff to identify measures and technologies potentially suitable for proposal to the relevant third-party Statewide ET programs.

Given the recent transition to the third-party implementation model in 2021 (ETP-EE-Gas) and 2022 (ETP-EE-Electric), the TIS Program focus for 2022 was to complete all previously committed projects and adjust program strategies to support the Statewide ET programs. Throughout the year, the SDG&E ETP participated in key industry advisory committees (ETCC, CEE, EPRI, E Source), virtual and in-person 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 (www.etcc-ca.com). SDG&E participates in the ETCC Leadership Team, which reviewed priorities and selected three Key Initiatives (KI) to center the ETCC focus moving forward:

i. Low-Global Warming Potential (GWP) Refrigerants,

ii. Distributed Energy Resources in Office Buildings,

iii. Decarbonizing Commercial Water Heating

Discussion forums were held with the ETCC Advisors on each of the Key Initiatives to expand and flesh out each. In 2023, ETCC will focus on refining and implementing scopes of work for each of these KIs as outlined and agreed upon by the ETCC Leadership Team.

ETCC also held the annual ET Summit in October 25-26, 2022, which was a virtual conference spread over two half-days and discussed the KIs as well as related projects being implemented in North America. SDG&E engaged with the development of the Summit agenda and supported preparations, including outreach to potential speakers and panelists as well as moderation of a panel discussion on demand-response focused technologies and activities. The ET Summit continues to grow in participation and reach, with 437 unique individuals registering in 2022, the largest level of participation in at least five years, with 76% of registrants located within California.

5. SDGE3247 - Technology Assessment Support

Program Overview

SDG&E's ETP has historically leveraged the Technology Assessment (TA) element as a core function that provides critical support to EE programs through the evaluation of performance

claims of new or underutilized technologies that have the potential to become EE measures. A key objective of these assessments has been 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, such as behavioral studies, market research, or modeling. In addition to other findings, assessments typically generate some of the data that EE incentive programs can use to construct a measure package for each measure, estimating energy and demand savings over the life of the measure.

Program Strategies and Outcomes

SDG&E implemented several strategies in 2022 to accomplish the goals of the TA subprogram. As part of the transition to the new Statewide ET programs, SDG&E's primary focus for the 2022 TA Program was to complete existing committed projects. Seven TA projects were completed in 2022: 1) a study on a compressor-less residential air conditioning technology, 2) a plug load control system technology laboratory study, 3) a San Diego Unified School District public elementary school ZNE project, 4) a CEC EPIC demonstration project focused on ZNE and integrated demand side management at three San Diego public libraries, 5) a project on a cloud-based fault detection and diagnosis (FD&D) system for quality maintenance, 6) a collaborative study on alternative refrigerants to enhance customer value, and 7) a high efficiency, adjustable lighting laboratory study focused on indoor agriculture environments. SDG&E's ETP produced and published reports for these completed projects to the ETCC website describing assessment results, conclusions, and recommendations and engaged various EE program stakeholders to conduct the technology transfer of the studies' findings.

Three projects remain under the TAS subprogram at the end of 2022, which are expected to reach their completion by the end of 2024. Through the CEC's Electric Program Investment Charge (EPIC) program, SDG&E continued work on two projects: 1) Multifamily Heat Pump Water Heating led by EPRI in partnership with a mid-sized low-income building owner/operator to develop, test, and demonstrate a zero-GWP, reversible heat pump system in a multifamily application using a carbon dioxide/ammonia refrigerant pair, and 2) Development and Testing of Advanced Low-GWP Heat Pump to demonstrate an advanced heat pump at an institutional facility to assess unit performance, reliability, economics, and GHG emissions reduction potential. Additionally, the TA subprogram continued to progress work on the Advanced Energy Communities demonstration project, with the objective of demonstrating scalable and affordable decarbonization retrofits in existing multifamily communities. This project is in support of advancing state goals and understanding of the implications of decarbonization for low-income multifamily 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 pilots. SDG&E identified, screened, and prioritized these technologies or strategies for inclusion to the program's TA studies. Despite the ETP continuing to scan, screen, and prioritize TA candidate projects and technologies in coordination with the EE programs as well as Statewide ETCC partners, the primary objective is to identify opportunities that can be fed into the Statewide ET program. As such, no new locally led projects under the TA program were initiated in 2022.

6. SDGE3248 – Technology Development Support

Program Overview

The Technology Development Support (TDS) subprogram assists 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 well-positioned to undertake targeted, cost-effective activities supporting technology development efforts. This support decreases innovators' uncertainties and allows SDG&E the opportunity to directly engage with private industry and influence new technologies while they are under development.

Program Strategies and Outcomes

SDG&E implemented several strategies in 2022 to accomplish the goals of the TDS subprogram. Due to ETP's on-going transition to the statewide third-party implementation model this year, the primary focus of the TDS Program in 2022 was to continue to implement and complete all previously committed projects. While the ETP continued its mandate to scan, screen, and prioritize candidate projects and technologies (now with the intention of funneling these opportunities to the Statewide ET programs), SDG&E did not initiate any new projects under the TDS Program in 2022.

SDG&E's ETP collaborated directly with industry actors and partners as well as innovators from universities and other research institutions, including 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 also 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.

Workforce Education & Training

7. SDGE3254 - Integrated Energy Education Training (IEET)

Program Overview

The Workforce, Education & Training (WE&T) program, also named Integrated Energy Education and Training (IEET) Subprogram focuses on skills and market development training 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.

Program Strategies and Outcomes

SDG&E continue to offer training through the Technical Upskill component of the WE&T program. Certification training and certificate programs were offered through several workshops. The Building Science Principles, Building Operator Certification, North American Technician for Excellence (NATE), and Building Performance Institute (BPI) Analyst Certification are examples of exam prep and proctored exam trainings that were offered in 2022. 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. These various courses covered residential, non-residential, solar, new construction as well as California Residential Energy Services Network (CA RESNET). In the BPI Analyst Certification course, students learned how to perform comprehensive, whole-home assessments, identify problems at their root cause, and prescribe and prioritize solutions based on building science. The certification verified the knowledge, skills and abilities needed to conduct comprehensive building performance audits, including assessing whole-building ventilation, measuring airflows, combustion safety, and

testing/data collection. SDG&E added EPA 608 Type II and EPA 608 Universal certification courses in 2022. These included topics such as environmental impacts of various materials, regulations, and how to provide a safe and eco-friendly outcome with each service. The Type II Certification Preparation course was geared towards leak detection, how to properly test equipment, and recovery techniques and requirements.

SDG&E also offered on-demand, self-paced training for various segments. This training option allowed participants to take the training during a time that best suited their needs. For instance, the HVAC segment had over 200 modules targeted to technicians pursuing their NATE certifications. These classes provided an in-depth understanding of HVAC quality maintenance and installation for both commercial and residential systems.

SDG&E continued to offer a comprehensive homeowner series that addressed utility bills, how to create a high-performance home, the benefits of installing energy efficient equipment and learning how to correctly size a solar system. In 2022, a new advanced multi-part Home Energy series for Home Professionals geared toward contractors, sales and real estate professionals, and jobseekers who are intending on upskilling to enter the building performance/energy efficiency industries was offered. Topics included key components of a home energy audit, creating an integrated whole home project strategy, building science theory, heat pumps, sizing solar systems and energy storage.

Real estate professionals, which include real estate salesperson, appraisers, lenders, and related professionals were offered training on the value of energy efficiency when buying and selling a home in the residential market. Training included how to understand the benefits of carbon free and high-performance homes and how all-electric homes powered by solar add to the value of a home. Concepts offered how these homes can be healthy, safe, comfortable, durable, of higher quality and with lower long-term costs of residential ownership.

As part of SDG&E's virtual strategy plan, the program continued to offer all training online in 2022. SDG&E ensured 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 2023 as virtual training will be the primary method of administering training.

SDG&E continued to collaborate with several organizations for the Core Energy Education Collaboration component of the WE&T program. SDG&E partnered with several organizations from 2021 but also looked to form new strategic partnerships in 2022 and brought on an additional

vendor to work with organizations. One of the challenges faced with CEEC is the lengthy time frame in getting necessary approvals from organizations on the Collaboration Agreement. As a result, some Collaborations do not start to materialize until the later part of the year. Another challenge was competing priorities on the organization's side which led to some Collaborations crossing program years to align with the organization's availability to dedicate time and focus on the commitments in the Collaboration. Each Collaboration is unique, based on the needs of the organization. As such, it was difficult to establish a baseline to then be able to measure outcomes. SDG&E will be working on ways to improve establishing baselines to compare to outcomes. One of the Collaborations was highlighted by a dean of a San Diego community college who identified SDG&E's support as important because test lab materials were provided for students through this collaboration.

SDG&E began the solicitation process at the end of 2022 and will continue to administer the WE&T program in 2023, closing the program at the end of the year. SDG&E anticipates the new third-party implementor to take over the program in 2024.

SDG&E's marketing campaign focused on directing customers to the WE&T program landing page for registration. During the campaign period, WE&T program specific messages and the monthly digest emails promoting classes had an average open rate of over 39%, which resulted in an increase of over 15% in pageviews from 2021. On-Demand training courses covering the various segments were viewed by over 3,000 participants. Approximately nine certification workshops were offered through Technical Upskill. Over 100 Energy Codes and Standards classes were promoted via WE&T program marketing efforts. Approximately 15 training courses were offered to educate residential real estate professionals on the value of energy efficiency. Over 300 residential customers participated in the home energy training. Overall, more than 7,900 students attended Technical Upskill training and approximately six 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 90% for most of the year.

8. SDGE3280 – IDEAA

Program Overview

SDG&E, along with the other California IOUs, established IDEEA365, a cross-cutting third- party solicitation program that supports 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 programs under the following new portfolio segments:

1. Resource Acquisition: programs that produce cost effective energy savings and demand reduction
2. Market Support: programs that focus on educating customers, training contractors, building government partnerships, or moving beneficial technologies towards greater cost effectiveness
3. Equity: programs aimed at improving access to energy efficiency programs for hard-to-reach or underserved customers and disadvantaged communities.

Program Strategies and Outcomes

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 Energy Efficiency Procurement Review Group (EE PRG), hiring Independent Evaluators (IE) and developing best practices with other utilities.

In 2022, 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 requirements of the Commission and the EE PRG were met. One requirement was that the IOUs have 60% of its portfolio outsourced by the end of 2022. SDG&E met this requirement in August 2022.

SDG&E continued to develop and launch third-party solicitations, in accordance with Commission direction. Engagement continued with the EE PRG and the pool of Independent Evaluators to monitor the solicitation process and provide input and feedback. The collaboration resulted in best practices and lessons learned that will continue to guide and improve the third-party solicitation process into 2023. In 2022, SDG&E executed contracts for the following programs, which contributed to SDG&E exceeding the 60% compliance requirement:

SOLICITATION	ADVICE LETTER FILED	ADVICE LETTER APPROVED	IMPLEMENTATION PLAN WEBINAR
SW Plug Load and Appliances (PLA)	1/28/2022	5/23/2022	7/12/2022
Public Sector – Local Government	6/17/2022	8/11/2022	9/27/2022
Residential Single Family 2.0	6/24/2022	8/11/2022	9/27/2022
Local Agricultural	7/22/2022	8/30/2022	10/13/2022
Local Behavioral Program	11/16/2022	12/16/2022	2/24/2023
Local Industrial/Industrial Port Tenants	9/21/2022* 12/8/2022	1/4/2023	2/24/2023

* On October 10, 2022, Energy Division staff suspended the AL for further review. The Energy Division staff requested a supplemental to this AL on November 18, 2022. On December 8, 2022, SDG&E submitted a Full Supplemental Advice Letter, SDG&E AL 4079-E-A, which was subsequently approved with an effective date of January 4, 2023.

SDG&E expects to execute contracts by the end of 2023 for the following program sectors:

- Statewide Quality Assurance/Quality Maintenance, Local Small Business Outreach, Local Workforce Education & Training, Local Residential Equity and Local Non-Residential Behavioral.

In 2023, SDG&E will release solicitations to the market for the following program sectors:

- Statewide HVAC, Residential Multi-Family, Groceries/Restaurants/Food Storage, Private Institutions/Healthcare, Lodging, Wholesale/Retail/Offices, and Residential Fuel-substitution.

9. SDGE3262 - On-Bill Financing

Program Overview

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 or third-party programs and financing for the project cost balance. Customer loans are repaid through a fixed monthly installment repaid through the customer's utility bill.

Program Strategies and Outcomes

OBF coordinates with SDG&E and third-party programs to support financing of approved measures and projects. The OBF staff works closely with the third-party Program Implementers and EE Programs Advisors by offering program support resources throughout the customer's energy efficiency journey, enabling SDG&E to provide alternative options for customers who may have financial constraints to install energy efficiency projects. Although SDG&E has seen a reduction in projects generally, SDG&E anticipates continued uptake in participation from the new third-party energy efficiency programs. SDG&E continues to implement a customer cap to ensure that funding remains available for more customers. By enabling qualified customers to complete energy efficiency projects with no up-front costs, OBF eliminates one of the major barriers to participation in energy efficiency. Since its inception in 2006, SDG&E's OBF program has funded over 1,640 projects/loans totaling approximately $69 million as of year-end 2022.

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. SDG&E's 2022 default rate for OBF is below 1%. Projects that were facilitated by an OBF loan enabled savings of approximately 1.3M kWh, 56 kW and 2,500 therms. 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.

X. OTHER PROGRAMS AND ACTIVITIES

1. SDGE3281 - Evaluation Measurement and Verification

Program Overview

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.

Program Strategies and Outcomes

SDG&E took part in the development of the statewide EM&V 2021-2023 roadmap that outlines the various EM&V studies that the Commission's Energy Division and utilities will manage in 2022 and 2023. SDG&E either managed or participated in statewide studies through the various Project Coordinating Groups (PCGs) that support these studies in 2022.

- SDG&E kicked off its EE Residential Market Study, renamed EE Residential Pulse Check Study, in 2022. This study was proposed in the previous EM&V roadmap and the CPUC approved use of the contracted vendor, Opinion Dynamics. By the end of 2022, the study was requesting data from the three IOUs co-funding the study (SDG&E, PG&E, and SCE) to help launch the customer survey starting in Q1 2023.

- SDG&E also helped complete a co-funded study with the lead-PA, PG&E, for their Upgrade Panel Study in 2022.

- SDG&E's EM&V teams worked with internal stakeholders to communicate the RTRs from the impact evaluations, which resulted in modifications to existing SW programs.

- SDG&E EM&V team members also contributed to the third-party EE Solicitations that were held this year.

In D.16-08-019, the Commission increased the portion of the EM&V budget assigned to program administrators from 27.5% to a maximum of 40%.[20] Additionally, D.16-08-019 states, "[a]dditional budget beyond the current 27.5 percent earmarked for program administrators, and

[20] D.16-08-019 at 80 – 81.

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."[21]

Resolution E-5152 also notes that the 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 or EM&V for budgeting purposes."[22] Continuing from 2021, SDG&E has broken out eTRM enhancement costs and charges them to EM&V dollars, where before 2021, eTRM enhancements were 100% allocated to program dollars.

[21] *Id.* at 81.

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

XI. OTHER PROGRAMS AND ACTIVITIES

A. Market Transformation

D.19-12-021 requires the IOUs to co-fund a $310 million dollar initiative to transform the energy efficiency market. PG&E is the lead fiscal agent and selected Resource Innovations as the third-party Program Administrator. SDG&E's portion of the Co-Funding Agreement is $43.4M paid over 8 years, with cost recovery through the Public Purpose Program charge. Resource Innovations is partnering with Cadmus Group, 2050 Partners, Ortiz Group, BRIO, and Unrooz Solutions to design market transformation initiatives and then bid out their implementation.

As part of this process, a Market Transformation Advisory Board (MTAB) is being created to review and opine on initiatives. The MTAB will consist of subject matter experts representing stakeholders and will include a rotating IOU representative. Over the long term, the efforts launched now by Resource Innovations will transition to an independent, nonprofit organization dedicated solely to market transformation in California.

1. Summer Reliability Market Access Program

Program Overview

SDG&E's Summer Reliability Market Access Program (SRMAP) offers aggregators the opportunity to provide SDG&E customers with a wide variety of options to reduce energy usage, which are not available through conventional Energy Efficiency programs. The program utilizes population-level Normalized Metered Energy Consumption (NMEC) rules and methodologies to determine energy savings. A pay-for-performance (PFP) payment structure incentivizes aggregators to find energy efficiency projects that deliver measurable peak (4pm-9pm) demand savings, notably during summer months (June 1st-September 30th) and between the hours of 4pm to 7pm (Peak) and 7pm to 9pm (Net Peak).

The Summer Reliability Market Access Program is not part of SDG&E's Energy Efficiency portfolio, and instead was designed in response to Governor Newsom's Emergency Proclamation of July 2021 to expedite clean energy projects and relieve demand on the electrical grid during extreme weather events.[23] Program incentives are tiered for demand savings delivered during

[23] *See* D.21-12-011 at 2-3.

summer months (June-September) for peak (4pm-7pm) and net peak (7pm-9pm) hours to drive participation and outcomes for this effort.

Program Strategies and Outcomes

On March 24, 2022, SDG&E's Advice Letter 3951-E was approved authorizing Market Access Program funding. SDG&E finalized program design, developed program documents and procedures, and posted the Implementation Plan to Commission's CEDARS website on May 31, 2022.

SRMAP began enrolling aggregators and accepting projects on June 1, 2022. Marketing activities focused on aggregator recruitment and resulted in 12 enrolled aggregators for 2022.

The program worked closely with both potential and enrolled aggregators to begin building a project pipeline. This effort included investigating measure types and project feasibility, completing customer eligibility checks, and calculating incentive estimations. Projects approved for installation include residential and commercial customer sectors, with a majority being residential.

In preparation for the first evaluation period (Q3), SDG&E began data collection and built the population-level NMEC engine used to determine energy savings.

Installed projects began delivering peak and net peak demand savings in the summer of 2022 and through the remainder of the year. In the later part of 2022, SDG&E turned its focus to building the project pipeline for summer 2023.

2. California Analysis Tool for Locational Energy Assessment (CATALENA)

Project Description (Provided by Lead IOU SCE, modified by SDG&E)

The CATALENA tool is intended to expand the previously approved Energy Atlas to statewide use including both the public-facing database and the back-end geospatial relational database, making disaggregated demand data accessible to qualifying users. On February 3, 2023, the CPUC issued D.23-02-002, the Decision Addressing Energy Efficiency Third- Party Processes and Other Issues. OP 17 indicates the Commission's intent to seek a memorandum of understanding with the CEC to implement CATALENA. The Decision further "directs the IOUs to allocate $2 million specified in D.18-05-041 to a new accounting mechanism (e.g., a balancing account or sub-

balancing account) for the purpose of transferring those funds to the CEC to develop and maintain the tool."[24]

On April 3, 2023, pursuant to OP 16 of D.23-02-002, PG&E submitted a joint Tier 1 advice letter on behalf of PG&E, SDG&E, SCG, and SCE to document the process for jointly funding CATALENA.[25] In preparation for the launch of the SW CATALENA project, IOUs have created a work scope for the CATALENA website and database system that provides 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; (i) energy efficiency program deployment; (ii) electric vehicle and charging station data; (iii) behind-the-meter solar and storage capacity, and (iv) other relevant public data. CATALENA is anticipated to be capable of displaying data through graphs, charts, and (potentially) an interactive map.

Ongoing Challenges/Changes for 2022 (Provided by SDG&E)

The IOUs will continue to work towards transitioning the CATALENA project to include a process to transfer the full amount in the accounting mechanism required by OP 17 of D.23-02-002 to the CEC.

[24] D.23-02-002 at 60.

[25] *See* SDG&E AL 4197-E/3184-G. PG&E AL 4734-G/6904-E, SCG AL 6121-G, SCE AL 5005-E, approved May 5, 2023 and effective April 3, 2023.

Appendix A-E

APPENDIX A – ANNUAL REPORT TABLES

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 - SAVINGS & GOALS

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 2022 program year toward the CPUC Adopted Goals (D.19-08-034). The annual impacts are reported for 2022 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.

T-1 2022 Net First Year Savings, Goal Attainment and Fuel Sub Load Reduction Adjustments

	GWh	MW	MMTherms	GWh	MW	MMTherms
	Portfolio - Non C&S			Codes & Standards		
2022 Total Installed Portfolio Savings (3)	50.4	9.4	2.0	500.3	82.9	3.6
Adopted Goals (D.21-09-037, D.22-05-016)(1),(2)	104.0	22.0	2.0	205.0	39.0	2.0
Percentage of goal attainment (4)	49%	43%	100%	244%	213%	178%
Fuel Substitution Goal Reduction see Tab 2, Table 2B	-	-	0.04	-	-	-
Goals less FS Goal Reduction (7-9 not reflected in CEDARS unless requested)	104.00	22.00	1.96	205.00	39.00	2.00

Notes:

(1) CPUC Adopted Goals reflect Decision D.22-05-016 "Correcting Errors in D.21-09-037 Regarding Energy Efficiency Goals for 2022-2032 (R.13-11-005)".

(2) CPUC Adopted Goals and Installed Portfolio Savings exclude Energy Savings Assistance (ESA) Program.

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

(4) Percentage of goal attainment is calculated using adjusted goals for fuel substitution.

(5) Energy Savings may not exactly match with the results in CEDARS due to rounding.

SECTION 2 - FUEL SUBSTITUTION 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.

T-2 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	Energy Savings	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
Use Category [8]	(MMBTU) [2]		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	4,122	kWh	1,208,132		SDG&E	-	41,233				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	217	kWh	63,553		SDG&E	-	2,169				SHW
Whole Building											WhlBldg
TOTAL	**4,339**	kWh	**1,271,685**	-	SDG&E	-	**43,402**				

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	Original Fuel Goals Reduction (PY activities) [11]		Original Fuel Goals Reduction True-up (PY-1 activities) [12]		Total PY Goals Reductions	
Sponsoring New Fuel Measure [10]	kWh	Thm	kWh	Thm	kWh	Thm
PG&E						
SCE						
SDG&E		43,402				43,402
SoCalGas						
3C-REN						
BayREN						
I-REN						
MCE						
RuralREN						
SoCalREN						
RCEA						
SJCE						
Total Goal Reduction	-	**43,402**	-	-	-	**43,402**

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.

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 2022 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.

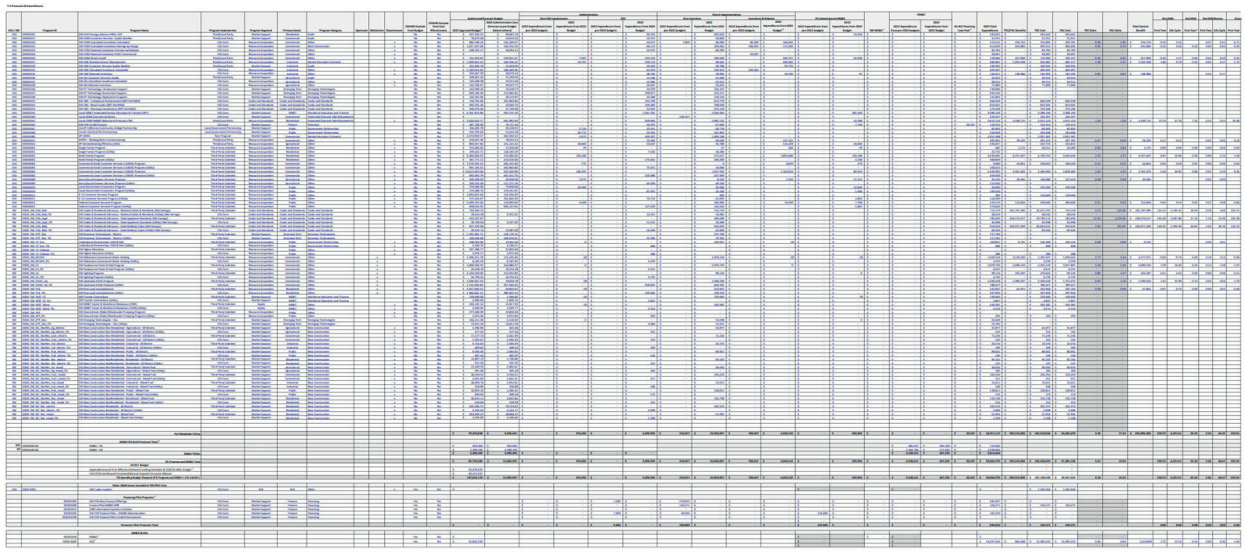
T-3 Environmental Impacts of EE Portfolio by Measure Use Category

Measure Use Category	Gross annual tonnes of CO2 avoided[1]	Net annual tonnes of CO2 avoided[1]	Gross lifecycle tonnes of CO2 avoided[1]	Net lifecycle tonnes of CO2 avoided[1]	Gross annual tonnes of NOx avoided[2]	Net annual tonnes of NOx avoided[2]	Gross lifecycle tonnes NOx avoided[2]	Net lifecycle tonnes NOx avoided[2]	Gross annual tonnes PM10 avoided[2]	Net annual tonnes PM10 avoided[2]	Gross lifecycle tonnes PM10 avoided[2]	Net lifecycle tonnes PM10 avoided[2]
Appliance or Plug Load	10,174	10,171	99,691	99,652	3	3	24	24	1	1	9	9
Building Envelope	4,863	4,832	107,373	107,221	1	1	13	13	-	-	5	5
Compressed Air	209	209	3,898	3,898	-	-	1	1	-	-	-	-
Commercial Refrigeration	10,136	9,475	94,205	89,820	3	3	23	22	1	1	8	8
Codes & Standards	7,041	7,041	142,279	142,279	2	2	31	31	1	1	12	12
Food Service	1,427	928	17,108	11,127	1	-	6	4	-	-	-	-
HVAC	13,999	13,740	215,609	210,975	3	3	39	38	1	1	13	13
Irrigation	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	76,554	76,447	1,090,884	1,090,057	21	21	253	252	8	8	94	94
Non-Savings Measure		-	-	-	-	-	-	-	-	-	-	-
Process Distribution	68	44	1,257	817	-	-	-	-	-	-	-	-
Process Drying		-	-	-	-	-	-	-	-	-	-	-
Process Heat	362	335	5,699	5,215	-	-	2	1	-	-	-	-
Process Refrigeration		-	-	-	-	-	-	-	-	-	-	-
Recreation	1,365	1,342	16,719	16,607	-	-	4	4	-	-	1	1
Service		-	-	-	-	-	-	-	-	-	-	-
Service and Domestic Hot Water	21,381	17,413	200,464	171,103	4	3	35	22	-	-	1	1
Whole Building	25,528	26,176	310,221	311,043	7	8	50	50	2	2	17	17
TOTAL	173,107	168,153	2,305,407	2,259,814	45	44	481	462	14	14	160	160

SOURCE: CET Outputs
[1] For 2022 PY CO2 emissions in CEDARS is expressed in metric tons for electric and short tons for gas. Conversions are done in this table to represent metric tons (denoted as Tonnes) for the total.
[2] For 2022 PY, NOx and PM10 emissions in CEDARS are represented as pounds; Conversions are done in this table to represent in metric tons (denoted as Tonnes) for the totals.

SECTION 4 - PROGRAM DATA

The purpose of Table 4 is to report the annual costs expended by SDG&E in implementing the 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 Financing Programs/Pilots.



SECTION 5 - SEGMENT SUMMARY

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

T-5 PA Savings By Sector and Segment

						PY2022 ENERGY SAVINGS (Net)				
Sector	2022 Approved Budget*	2022 Expenditures*	TRC Ratio	PAC Ratio	Total System Benefit	First Year Net GWh	Lifecycle Net GWh	First Year Net MW	First Year Net MMTherms	Lifecycle Net MMTherms
Resource Acquisition										
Agricultural	$ 1,742,432	$ 519,764	0.07	0.06	$ 29,495	-	-	-	0.01	0.03
Commercial	$ 34,561,126	$ 10,563,739	0.97	1.23	$ 12,872,952	9.86	88.09	1.51	0.49	5.98
Industrial	$ 2,312,504	$ 1,234,998	0.97	0.95	$ 1,172,024	1.84	9.19	0.24	0.06	0.44
Public	$ 11,431,103	$ 887,338	0.13	0.14	$ 122,562	0.05	0.53	0.02	0.01	0.09
Residential	$ 12,392,052	$ 8,863,283	1.19	1.22	$ 10,645,099	38.70	48.58	7.61	1.43	5.69
Cross-Cutting	$ -	$ -	-	-	$ -	-	-	-	-	-
PA Subtotal (does not include ESA)	$ 62,439,216	$ 22,069,122	1.00	1.14	$ 24,842,132	**50.44**	**146.41**	**9.36**	**2.01**	**12.22**
Market Support										
Agricultural	$ 127,917	$ 112,860	-	-	$ -	-	-	-	-	-
Commercial	$ 2,806,558	$ 2,484,127	-	-	$ -	-	-	-	-	-
Industrial	$ 381,352	$ 186,637	-	-	$ -	-	-	-	-	-
Public	$ 380,362	$ 547,981	-	-	$ -	-	-	-	-	-
Residential	$ 1,416,126	$ 1,133,377	-	-	$ -	-	-	-	-	-
Cross-Cutting	$ 8,304,052	$ 5,685,857	-	-	$ -	-	-	-	-	-
PA Subtotal (does not include ESA)	$ 13,416,366	$ 10,150,840	-	-	$ -	-	-	-	-	-
Equity										
Agricultural	$ -	$ -	-	-	$ -	-	-	-	-	-
Commercial	$ -	$ -	-	-	$ -	-	-	-	-	-
Industrial	$ -	$ -	-	-	$ -	-	-	-	-	-
Public	$ -	$ -	-	-	$ -	-	-	-	-	-
Residential	$ -	$ -	-	-	$ -	-	-	-	-	-
Cross-Cutting	$ 248,395	$ 246,595	-	-	$ -	-	-	-	-	-
PA Subtotal (does not include ESA)	$ 248,395	$ 246,595	-	-	$ -	-	-	-	-	-
Portfolio										
Agricultural	$ 1,870,349	$ 632,625	0.05	0.05	$ 29,495	-	-	-	0.01	0.03
Commercial	$ 37,367,684	$ 13,047,866	0.82	1.00	$ 12,872,952	9.86	88.09	1.51	0.49	5.98
Industrial	$ 2,693,856	$ 1,421,635	0.84	0.83	$ 1,172,024	1.84	9.19	0.24	0.06	0.44
Public	$ 11,811,465	$ 1,435,319	0.08	0.09	$ 122,562	0.05	0.53	0.02	0.01	0.09
Residential	$ 13,808,178	$ 9,996,660	1.06	1.08	$ 10,645,099	38.70	48.58	7.61	1.43	5.69
Cross-Cutting	$ 8,552,447	$ 5,932,452	-	-	$ -	-	-	-	-	-
PA Subtotal (does not include EM&V, ESA or C&S, RENS & CCAs)	$ 76,103,978	$ 32,466,557	0.72	0.79	$ 24,842,132	**50.44**	**146.41**	**9.36**	**2.01**	**12.22**
CPUC Savings Goal (w/o C&S)						104		22	2	
savings as % of CPUC Savings Goal (w/o C&S)						48.5%		42.5%	100.3%	
Total EM&V	$ 3,309,295	$ 3,015,646								
Codes and Standards	$ 3,319,112	$ 3,884,555	3.83	146.75	$ 570,053,251	500.27	6075.21	82.88	3.55	54.45
PA Portfolio Total (excl. C&S, does not include ESA, RENS & CCAs)	$ 79,413,274	$ 35,482,203	0.66	0.72	$ 24,842,132	50.44	146.41	9.36	2.01	12.22
PA Portfolio Total (does not include ESA, RENS & CCAs)	$ 82,732,386	$ 39,366,759	3.18	15.25	$ 594,895,384	550.72	6,221.61	92.24	5.56	66.67
CPUC Savings Goal (w/ C&S)						309		61	4	
savings as % of CPUC Savings Goal (w/ C&S)						178%		151%	139%	

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 2022 program year.

T-6 Cost Effectiveness (Net)

Annual Results	Total Benefits (TRC/PAC)	Total TRC Cost	Net TRC Benefits	TRC Ratio	Total PAC Cost	Net PAC Benefits	PAC Ratio	PAC Cost per kW Saved ($/kW) (1)	PAC Cost per kWh Saved ($/kWh) (2)	PAC Cost per therm Saved ($/therm) (2)
Total Portfolio w/o C&S	$25,262,585	$38,229,072	($12,966,487)	0.66	$35,152,467	($9,889,882)	0.72		$0.28	$0.40
Total Portfolio with C&S	$ 595,315,836	$ 187,190,589	$ 408,125,247	3.18	$ 39,037,023	$ 556,278,814	15.25	NA	$ 0.01	$ 0.10

(1) NA--This is not applicable because the adopted cost methodology does not provide information to calculate a meaningful value for PAC Cost per kW.
(2) SDGE PAC annual cost split is 90% (electric) 10% (gas) based on 2019 authorized funding electric/gas allocations.
To calculate the levelized PAC Cost over the discounted net lifecycle savings (kWh or Therm) = Total PAC Cost (kWh or Therm)/Discounted Net Lifecycle Savings (kWh or therms).

SECTION 7 - BILL 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 the Energy Efficiency Policy Manual version 3, adopted in D.05-04- 051.

T-7 Average Billpayer Impacts from Net Savings

2022	Electric Average Rate (Res and Non-Res [1]) $/kWh	Gas Average Rate (Core and Non-Core) $/therm	Average First Year Bill Savings ($)	Average Lifecycle Bill Savings ($)
San Diego Gas & Electric Average	$ 0.31	$ 1.56	$ 177,939,696	$ 2,016,261,459

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

SECTION 8 - SAVINGS BY USE CATEGORY

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 programs.

T-8 Annual Savings By Use Category 2022

			Gross GWh		Gross MW	Gross MMTherms		Net GWh		Net MW	Net MMTherms	
Measure End Use Category	TRC Ratio	PAC Ratio	First Year	Life Cycle	First Year	First Year	Life Cycle	First Year	Life Cycle	First Year	First Year	Life Cycle
Appliance or Plug Load	2.14	216.05	45.29	344.23	7.79	(0.23)	0.01	45.29	344.16	7.79	(0.23)	0.01
Building Envelope	2.19	111.35	9.46	184.57	4.54	0.44	8.56	9.46	184.57	4.54	0.43	8.53
Compressed Air	2.53	266.24	1.00	12.00	-	-	-	1.00	12.00	-	-	-
Commercial Refrigeration	4.14	10.33	40.00	331.00	6.00	-	-	38.00	315.00	6.00	-	-
Codes & Standards	4.00	161.52	28.00	447.00	4.00	-	-	28.00	447.00	4.00	-	-
Food Service	1.15	1.38	1.60	18.43	0.32	0.20	2.26	1.05	12.16	0.21	0.13	1.47
HVAC	2.81	17.07	37.10	509.51	14.86	0.82	11.08	36.49	500.91	14.69	0.80	10.71
Irrigation												
Lighting	6.81	160.74	309.17	3,638.57	31.01	(0.26)	(3.32)	308.65	3,635.13	30.95	(0.26)	(3.31)
Non-Savings Measure	-	-	-	-	-	-	-	-	-	-	-	-
Process Distribution	1.42	1.65	0.27	3.99	0.03	-	-	0.17	2.59	0.02	-	-
Process Drying												
Process Heat	4.36	9.21	0.09	0.87	-	0.06	1.02	0.07	0.83	-	0.06	0.93
Process Refrigeration												
Recreation	3.85	129.27	5.43	58.03	1.15	0.01	0.08	5.43	58.03	1.15	0.01	0.05
Service												
Service and Domestic Hot Water	2.89	8.28	5.20	49.77	0.68	3.79	35.06	5.21	50.12	0.68	3.04	29.51
Whole Building	1.71	14.62	70.03	656.23	21.94	1.52	18.58	71.96	658.59	22.29	1.55	18.63
Portfolio Total	**3.18**	**15.25**	**553.01**	**6,254.28**	**92.71**	**6.4**	**73.56**	**550.72**	**6,221.61**	**92.24**	**5.56**	**66.67**

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 2022. This information will be useful for the Commission's resource planning purposes by enabling program activities to be linked to a particular funding cycle.

T-9 Commitments

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

Commitments Made in the Past Year with Expected Implementation after December 2013-2015					
	Committed Funds	Expected Energy Savings			
2013-2015	$	GWh	MW	MmTherms	
Resource	$ -	-	-	-	
Non-Resource [2]	$ 2,575,480	-	-	-	
Codes & Standards	$ -	-	-	-	
SDG&E Total	$ 2,575,480	-	-	-	

Commitments Made in the Past Year with Expected Implementation after December 2016					
	Committed Funds	Expected Energy Savings			
2016	$	GWh	MW	MmTherms	
Resource	$ -				
Non-Resource [1]	$ 2,192,652				
Codes & Standards	$ -				
SDG&E Total	$ 2,192,652				

Commitments Made in the Past Year with Expected Implementation after December 2017					
	Committed Funds	Expected Energy Savings			
2017	$	GWh	MW	MmTherms	
Resource	$ -				
Non-Resource [1]	$ 214,629				
Codes & Standards	$ -				
SDG&E Total	$ 214,629				

Commitments Made in the Past Year with Expected Implementation after December 2018					
	Committed Funds	Expected Energy Savings			
2018	$	GWh	MW	MmTherms	
Resource	$ -				
Non-Resource [1]	$ 1,278,281				
Codes & Standards	$ -				
SDG&E Total	$ 1,278,281				

Commitments Made in the Past Year with Expected Implementation after December 2019					
	Committed Funds	Expected Energy Savings			
2019	$	GWh	MW	MmTherms	
Resource	$ 26,119				
Non-Resource [1]	$ 2,355,381				
Codes & Standards	$ -				
SDG&E Total	$ 2,381,500				

Commitments Made in the Past Year with Expected Implementation after December 2020					
	Committed Funds	Expected Energy Savings			
2020	$	GWh	MW	MmTherms	
Resource	$ 426,632				
Non-Resource [1]	$ 2,241,649				
Codes & Standards	$ -				
SDG&E Total	$ 2,668,281				

Commitments Made in the Past Year with Expected Implementation after December 2021					
	Committed Funds	Expected Energy Savings			
2021	$	GWh	MW	MmTherms	
Resource	$ -				
Non-Resource [1]	$ 1,932,089				
Codes & Standards	$ -				
SDG&E Total	$ 1,932,089				

Commitments Made in the Past Year with Expected Implementation after December 2022					
	Committed Funds	Expected Energy Savings			
2022	$	GWh	MW	MmTherms	
Resource	$ 1,701,656				
Non-Resource [1]	$ 2,842,059				
Codes & Standards	$ -				
SDG&E Total	$ 4,543,716				

[1] Non-resource values include committed funds for EM&V.
[2] Non-resource values is Financing Pilots commitments.

SECTION 10 - CAP & TARGET

The purpose of the following table (Table 10) 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.

T-10 2022 Energy Efficiency Quarterly Cap And Target Expenditure Performance

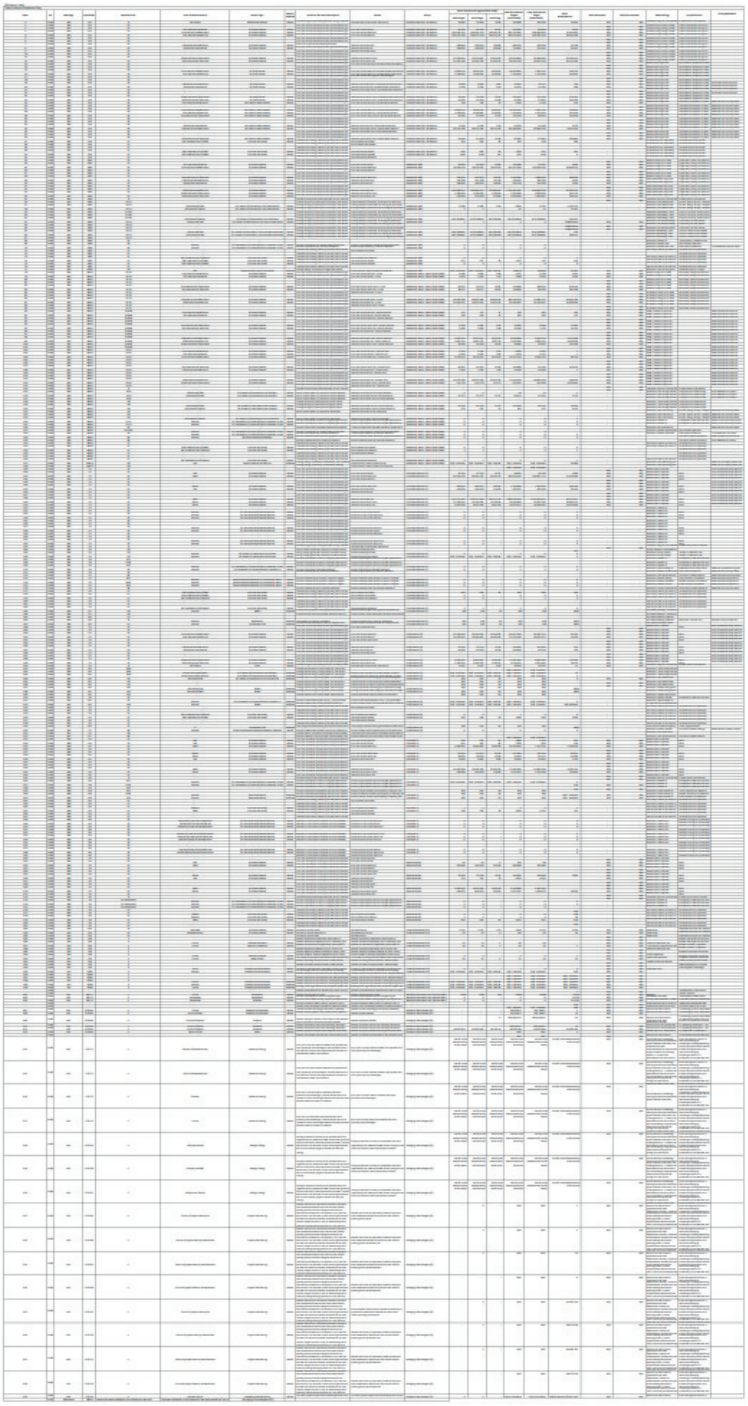
Energy Efficiency Cap and Target Expenditure Report								
		Expenditures [10]				Cap & Target Performance		
Line	Budget Category	Non-Third-Party Qualifying Costs	Third-Party Qualifying Costs [1]	Total Portfolio	One-Year Authorized IOU Budget[11]	Percent of Budget	Cap %	Target %
1	**Administrative Costs**				$9,296,641			
2	IOU [1]	$2,128,407		$2,128,407		2.57%	10.0%	
3	Third Party & Partnership [2]	$79,016	$335,442	$414,458		0.50%		10.0%
4	Target Exempt IOU Programs [3]	$2,919,278	$3,072	$2,922,350				
5	**Marketing and Outreach Costs [4]**				$2,420,222			
6	Marketing & Outreach	$382,374	$257,531	$639,904		0.77%		6.0%
7	Statewide Marketing & Outreach [5]	$0	$0	$0				
8	**Direct Implementation Costs**				$67,706,227			
9	Direct Implementation (Incentives and Rebates)	$1,242,295	$5,002,103	$6,244,397				
10	Direct Implementation (Non Incentives and Non Rebates)	$2,262,305	$7,829,584	$10,091,889		12.20%		20.0%
11	Direct Implementation Target Exempt Programs	$9,958,902	$3,008,790	$12,967,692				
12	**EM&V Costs (Investor Owned Utilities & Energy Division) [6]**	$467,235	$0	$467,235	$3,309,295	0.56%	4.0%	
13	**Total**	**$19,439,812**	**$16,436,521**	**$35,876,333**				
14	**2022 Authorized Budget [7]**			**$82,732,386**	$82,732,386			
15	**Third-Party Implementer Contracts (as defined per D.16-08-019, OP 10) [8]**			**$16,436,521**		19.87%		

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. Includes PA costs, SW programs PA costs, and old-definition 3P/GP contracts that don't meet the new 3rd Party definition.
2. New Third party program definition per D.16-08-019, OP 10. For Row 3 of this table, the "Third Party & Partnership" administrative costs under the "Non-Third Party Qualifying Costs" column are IOU costs for programs that met the old Third Party definition prior to the transition to the new third party definition. Third-party and government, direct costs are limited 10 percent of total third-party and government partnership budget based on D. 09-09-047.
3. Target Exempt Programs include: Codes & Standards, Emerging Technologies, Workforce Education & Training, Integrated Demand Side Management, CALSPREE Energy Advisor, Customer Services-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. SW ME&O is N/A for Program Year 2022.
5. SW ME&O budgets for October 2019 through 2021 were requested in Advice Letter 4098-G/5544-E and supplements. The amount in Line 7 represents the portion allocated to EE. N/A for 2022. SW ME&O budget ended in program year 2021.
6. EM&V costs include both SDGE'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 $0 for PY 2022.
7. As directed in the Energy Efficiency Policy Manual Version 6 March 2020, appendix F, this total includes any applicable SW ME&O (PY 2022 $0) and excludes BayREN, MCE, and 3C-REN budgets and is the denominator used to calculate the Admin, Marketing, and Direct Implementation Non-Incentives Cap & Target percentages.
8. SD&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. Statewide Expenditures on programs for which SDG&E is not the lead IOU may not agree to CEDARS values due to this Annual Report reflecting non-Lead SW program expenditures per the SW true-up reports received on April 14, 2023 and presented all as Direct Implementation non-Incentive. The values presented uploaded to CEDARS by the Lead IOU and allocated to the non-Lead IOUs may reflect Admin, Marketing, DINI, & Incentive program expenditures per the SW CEDARS module. These program cost allocations will not impact the Cap & Target calculations as they are all Third-Party Qualifying costs, which are excluded from the Cap Calculation and improve Target calculations. It is the responsibility of SW program Lead IOUs to manage the admin cap and other Cap & Target requirements for the respective SW Program Third Party implementors.
10. Expenditures is **Table 4 Program Data** 2022 Expenditures associated with Program Year 2022 Budget. This excludes 2022 Expenditures from pre-2022 budgets (commitment payments).
11. 2022 approved budget per 2022-2023 Biennial Energy Efficiency Program And Portfolio Budget Request AL 3887-E-A/3035-G-A.

SECTION 11 - BP METRICS TABLE

The purpose of the following table (Table 11) is to show portfolio savings for numerous key elements based on the activity of SDG&E's local portfolio and the service territory customer population.



SECTION 12 - 3P CALCULATION

The Purpose of Table 12 is to demonstrate compliance with Commission D. 18-01-004 and D. 16-08-019 regarding SDG&E's Third-Party Program solicitations.

T-12 3P Calculation

12-1. Local Program Third-Party Budgets

Program ID	Program Name	Counterparty Name	3P Procurement? (Y/N)*	Sector/Category	Approved Annual Budgets[1] 2023
SDGE4001	Single Family Program	Synergy Companies	Y	Residential	$ 1,500,000
SDGE4002	Multi Family Program[2]	Synergy Companies	Y	Residential	$ 4,840,000
SDGE4004	Commercial Large Customer Services (>20KW) Program[2]	TRC Solutions Inc.	Y	Commercial	$ 15,193,964
SDGE4006	Industrial Sector Program[2]	Cascade Energy	Y	Industrial	$ 2,473,675
SDGE4009	Agricultural Growers Services Program[2]	Cascade Energy	Y	Agricultural	$ 356,535
SDGE4010	Local Government Customers Program[2]	Okapi Architecture	Y	Public	$ 3,002,497
SDGE4011	K-12 Customer Services Program[2]	California Retrofit Inc	Y	Public	$ 3,215,881
SDGE4012	Federal Customer Services Program[2]	TRC Solutions Inc.	Y	Public	$ 6,050,000
SDGE4040	IDSM Local Residential Behavioral Program (EE)[2]	Bidgely	Y	Residential	$ 4,147,736
				Total	$ 40,780,288

* (Y) if the program was procured through the two-stage third-party solicitation process, (N) if program existed prior to the establishment of the process
[1] Approved budget per 2022-2023 Biennial Energy Efficiency Program And Portfolio Budget Request SDG&E AL 3887-E-A/3035-G-A. Deviations from amount filed are noted in footnote 2.
[2] For third-party compliance calculations, SDG&E utilizes implementer's annual contractual budget which may be different from the 2023 forecasted Biennial Budget Advice Letter.

12-2. Statewide Programs Third-Party Budgets

Program ID	Program Name	Counterparty Name	Lead IOU	Sector/Category	Approved Annual Budget[1] 2023	Pro Rata Share (%)	IOU Share of Projected Annual Budget 2023
SDGE_SW_HVAC_Up	SW Upstream HVAC Program[2]	CLEAResult Inc.	SDG&E	Commercial	$ 15,592,041	13.96%	$ 2,176,649
SDGE_SW_PLA	SW Plug Load and Appliances[2]	CLEAResult Inc.	SDG&E	Residential	$ 15,797,404	13.96%	$ 2,205,318
SCE_SW_ETP_Elec	Emerging Technologies Program, Electric[3]	Cohen Ventures, Inc.	SCE	Commercial	$ 17,819,947	15.50%	$ 2,762,092
SCE_SW_IP_Colleges	Institutional Partnerships, UC/CSU/CCC[3]	ClearResult Consulting Inc.	SCE	Public	$ 3,471,138	13.96%	$ 484,571
SCE_SW_UL	CA Statewide Lighting Program[3]	TRC Solutions Inc.	SCE	Commercial	$ 11,040,000	15.50%	$ 1,711,200
SCE_SW_WP	Water/wastewater Pumping[3]	Lincus Inc.	SCE	Public	$ 4,881,218	13.96%	$ 681,418
SCG_SW_FS	COM-SW-Point of Sale Food Service	Energy Solutions	SoCalGas	Commercial	$ 18,343,225	10.88%	$ 1,995,743
SCG_SW_MCWH	COM-SW-Midstream Commercial Water Heating	DNV GL Energy Services USA, Inc.	SoCalGas	Commercial	$ 17,252,452	10.88%	$ 1,877,067
SCG_SW_ETP_Gas	ET-SW-Emerging Technologies, Gas	CF Resources, LLC	SoCalGas	Emerging Tech	$ 4,339,776	7.80%	$ 338,503
PGE_SW_CSA_Appl	State Appliance Standards Advocacy[4]	Multiple	PG&E	Codes and Standards	$ -	13.96%	$ -
PGE_SW_CSA_Bldg	State Building Codes Advocacy	Multiple	PG&E	Codes and Standards	$ 5,998,421	13.96%	$ 837,380
PGE_SW_CSA_Natl	National Codes & Standards Advocacy[4]	Multiple	PG&E	Codes and Standards	$ -	13.96%	$ -
PGE_SW_IP_Gov	Institutional Partnerships: DGS and DoC	Alternative Energy Systems	PG&E	Public	$ 4,230,309	13.96%	$ 590,551
PGE_SW_NC_NonRes_electric	SW New Construction NonRes - All Electric[5]	Willdan Energy Solutions	PG&E	Commercial	$ 3,409,051	15.50%	$ 528,403
PGE_SW_NC_NonRes_mixed	SW New Construction NonRes - Mixed Fuel[6]	Willdan Energy Solutions	PG&E	Commercial	$ 8,746,903	13.96%	$ 1,221,068
PGE_SW_NC_Res_electric	SW New Construction Res - All Electric	TRC SOLUTIONS INC	PG&E	Residential	$ 6,759,536	15.50%	$ 1,047,728
PGE_SW_NC_Res_mixed	SW New Construction Res - Mixed Fuel	TRC SOLUTIONS INC	PG&E	Residential	$ 2,545,541	13.96%	$ 355,358
PGE_SW_WET_CC	WET Career Connections	The Energy Coalition	PG&E	WE&T	$ 1,000,000	13.96%	$ 139,600
PGE_SW_WET_Work	WET Career and Workforce Readiness	Strategic Energy Solutions	PG&E	WE&T	$ 1,891,288	13.96%	$ 264,024
							$ -
						Total	$ 19,216,670

[1] Approved budget per 2022-2023 Biennial Energy Efficiency Program And Portfolio Budget Request SDG&E AL 3887-E-A/3035-G-A. Deviations from amount filed are noted in footnotes 2, 3, 4, 5, 6.
[2] For third-party compliance calculations, SDG&E utilizes implementer's annual contractual budget which may be different from the 2023 forecaasted Biennial Budget Advice Letter.
[3] For third-party compliance calculations, SCE utilizes implementer's annual contractual budget which may be different from the 2023 forecasted Biennial Budget Advice Letter.
[4] PG&E is excluding these program budgets for the third-party calculation due to unique circumstances: the contracts expired at the end of 2022 and the solicitation is ongoing as of May 2023. Interim contracts were executed to continue program implementation until the new contracts are executed and Advice Letter approved.
[5] The budget shown here is the sum of each sector-specific PrgID for the statewide all-electric non-residential new construction program: PGE_SW_NC_NonRes_Ag_electric, PGE_SW_NC_NonRes_Com_electric, PGE_SW_NC_NonRes_Ind_electric, PGE_SW_NC_NonRes_Pub_electric, PGE_SW_NC_NonRes_Res_electric
[6] The budget shown here is the sum of each sector-specific PrgID for the statewide mixed-fuel non-residential new construction program: PGE_SW_NC_NonRes_Ag_mixed, PGE_SW_NC_NonRes_Com_mixed, PGE_SW_NC_NonRes_Ind_mixed, PGE_SW_NC_NonRes_Pub_mixed, PGE_SW_NC_NonRes_Res_mixed

12-3. AB 841 CEC School Stimulus 3P Amount

PY 2020 ABAL Budget*	$	81,485,692
Authorized 2020 Budget Cap*	$	116,456,311
Difference	$	34,970,619
	2023	
Applicable %		60%
Funding from applicable %	$	20,982,371
Funding from carryover		
Total AB 841 Funding	$	20,982,371

* Per D.21-01-004, percentage allocation is 80% for 2021, 70% for 2022 and 60% for 2023. For SDG&E, the base for calculation is $116,456,311 minus 2020 PY EE Budget of $81,485,692.

12-4. Annual Budget

Sector/Category	PY 2023 Budget [1]	
Residential	$	16,810,126
Commercial	$	41,397,665
Industrial	$	4,938,846
Agriculture	$	2,113,637
Emerging Tech	$	3,959,593
Public	$	12,826,945
WE&T	$	4,263,417
AB 841 Allocations*	$	20,982,371
Finance	$	396,119
EM&V	$	3,769,335
Codes and Standards	$	3,757,693
Total	**$**	**115,215,748**

*Allocations budgeted to the SRVEVR and SNPFA programs per AB 841. This number should equal the Total AB 841 funding found in section 3 of this worksheet
[1] Approved budget per 2022-2023 Biennial Energy Efficiency Program And Portfolio Budget Request SDG&E AL 3887-E-A/3035-G-A. Deviations from amount filed are noted in footnotes 2, 3, 4, 5, 6.

12-5. 60% Compliance

Component	2023	
Local 3P Programs	$	40,780,288
Statewide 3P Programs[1]	$	19,216,670
AB 841	$	20,982,371
Total 3P-Qualified Budget	**$**	**80,979,330**
Annual Budget	$	115,215,748
% Third Party Achieved		70%
Requirement		60%
In Compliance (T/F)		TRUE

SECTION 13 – 3P CONTRACT INFORMATION

T-13 Third-Party Contracts

Program ID	Program Name	Counterparty	Primary Sector (Market Segment)	Sub-Segment	Market Size	Types of Customers	Delivery Channel	Length (Duration, in months)	Contract Start Date	Contract End Date	Program Start Date	Program End Date	Contract Dollar Value
SDGE4001	Single Family Program	Synergy Companies	Residential	Single Family	1.1M	Single Family	Downstream	34	5/1/2022	3/31/2025	12/1/2022	12/31/2024	$ 4,500,000
SDGE4002	Multi Family Program	Synergy Companies	Residential	Multi-Family	437k	Multi-Family	Downstream	42	6/30/2020	12/31/2023	9/11/2020	12/31/2023	$ 14,570,000
SDGE4004	Commercial Large Customer Services (>20KW) Program	TRC Solutions Inc.	Commercial	Large Commercial	50k	Large Commercial	Downstream	66	6/30/2020	12/31/2025	1/1/2021	12/31/2023	$ 45,681,892
SDGE4006	Industrial Sector Program	Cascade Energy	Industrial	Industrial	12k	Industrial	Downstream	66	8/31/2022	2/29/2028	1/6/2023	12/31/2026	$ 15,831,757
SDGE4009	Agricultural Growers Services Program	Cascade Energy	Agricultural	Agricultural	4.6k	Agricultural	Downstream	69	6/29/2022	3/31/2028	8/31/2022	12/31/2026	$ 1,516,961
SDGE4010	Local Government Customers Program	Okagi Architecture	Public	Local Government	11k	Local Government	Downstream	34	5/1/2022	5/31/2028	8/11/2022	12/31/2025	$ 9,114,924
SDGE4011	K-12 Customer Services Program	California Retrofit Inc	Public	K-12	2.4k	K-12	Downstream	40	4/1/2021	12/31/2025	8/18/2021	12/31/2024	$ 10,501,927
SDGE4012	Federal Customer Services Program	TRC Solutions Inc.	Public	Federal	1.2k	Federal	Downstream	43	7/1/2021	3/31/2026	8/1/2023	12/31/2024	$ 18,360,000
SDGE4040	IDSM Local Residential Behavioral Program (EE)	Bidgely	Residential	Residential	1.1M	Residential	Behavioral	41	11/10/2022	3/23/2026	8/1/2023	12/31/2025	$ 12,045,618
SDGE_SW_HVAC_Up	SW Upstream HVAC Program	CLEAResult Inc.	Commercial and Residential	Commercial and Residential	S/M/L	Commercial and Residen	Midstream	39	10/1/2023	12/31/2023	1/1/2021	12/31/2023	$ 34,748,550
SDGE_SW_PLA	SW Plug Load and Appliances	CLEAResult Inc.	Residential	Residential	S/M/L	Residential	Midstream	39	1/19/2022	3/31/2025	8/22/2015	12/31/2024	$ 49,480,461

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 – FINAL TRUE UP REPORTS

1. Section 1 – HVAC

The purpose of the following tables 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. The Annual True-Up Report outlines the following:

· amounts funded by each of the IOUs, per the Co-Funding Agreement;

· 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 Upstream and Midstream Heating, Ventilation, and Air Conditioning (HVAC) Program
Program Year: 2022
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	$ 4,086,213.42	$ 2,874,687.00	$ 749,139.13	$ 1,250,954.81	$ 8,960,994.36	For each IOU: total dollar amount of payments for that Program Year for this SW Program
Total Interest Payment Accrued *	$ 37,284.66	$ 26,642.86	$ 7,555.17	$ 11,648.69	$ 83,131.38	For each IOU: dollar amount of interest accrued on that IOU's Total Monthly Payments made
Program Costs Actually Spent	$ 4,472,647.02	$ 3,146,546.41	$ 819,985.29	$ 1,369,257.73	$ 9,808,436.45	For each IOU: proportional share of the total program implementer contract costs spent for that Program Year
Program Costs Committed	$ 2,812,123.98	$ 1,978,353.89	$ 515,556.06	$ 860,904.62	$ 6,166,938.55	For each IOU: proportional share of the total program implementer contract costs committed for that Program Year
Annual True-Up Payment Accrued	**$ (3,161,272.92)**	**$ (2,223,570.44)**	**$ (578,847.05)**	**$ (967,558.85)**	**$ (6,931,249.26)**	For each IOU: dollar amount calculated as: [Total Monthly Payments Made + Total Interest Payment Accrued - Program Contract Costs Spent - Program Contract Costs Committed]

* Interest is calculated through December 31, 2022 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

2. Section 2 – PLA

Annual True-Up Report
Program Name: SW Plug Load Appliances Program
Program Year: 2022
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	$3,098,937.46	$2,180,129.68	$ 568,138.53	$ 948,709.80	$6,795,915.47	For each IOU: total dollar amount of payments for that Program Year for this SW Program
Total Interest Payment Accrued*	$ 2,055.53	$ 5,106.88	$ (126.19)	$ 2,222.32	$ 9,258.54	For each IOU: dollar amount of interest accrued on that IOU's Total Monthly Payments made
Program Costs Actually Spent	$ 730,603.67	$ 513,986.09	$ 133,944.01	$ 223,667.27	$1,602,201.04	For each IOU: proportional share of the total program implementer contract costs spent for that Program Year
Program Costs Committed	$ 124,292.05	$ 87,440.54	$ 22,786.87	$ 38,050.81	$ 272,570.27	For each IOU: proportional share of the total program implementer contract costs committed for that Program Year
Annual True-Up Payment Accrued	**$2,246,097.27**	**$1,583,809.93**	**$ 411,281.46**	**$ 689,214.04**	**$4,930,402.70**	For each IOU: dollar amount calculated as: [Total Monthly Payments Made + Total Interest Payment Accrued - Program Contract Costs Spent - Program Contract Costs Committed]

* Interest is calculated through December 31, 2022 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

3. Section 3 - 2022 PAYMENT SCHEDULE

The purpose of the following tables are to show the timing of the amounts funded by each IOU for the 2022 program year for each SDG&E Lead SW program.

SW HVAC

2022 Payment Schedule

SDGE SW Upstream and Midstream Heating, Ventilation, and Air Conditioning (HVAC) Program

Parties	Annual Funding Contribution per Load-Share	2022 Annual Funding Contribution	2022 Payments												
			Payment #1 01/15/22	Payment #2 02/15/22	Payment #3 03/15/22	Payment #4 04/15/22	Payment #5 05/15/22	Payment #6 06/15/22	Payment #7 07/15/22	Payment #8 08/15/22	Payment #9 09/15/22	Payment #10 10/15/22	Payment #11 11/15/22	Payment #12 12/15/22	Total
PG&E	45.60%	$ 5,372,252.52	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 447,687.71	$ 5,372,252.52
SDG&E	13.96%	$ 1,828,347.48	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	152,362.29	1,828,347.48
SCE	32.08%	$ 4,201,532.04	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	350,127.67	4,201,532.04
SCG	8.36%	$ 1,094,912.96	91,242.75	91,242.75	91,242.75	91,242.75	91,242.75	91,242.75	91,242.75	91,242.75	91,242.75	91,242.75	91,242.75	91,242.71	1,094,912.96
Total	**100.00%**	**$ 13,097,045.00**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.42**	**$ 1,091,420.38**	**$ 13,097,045.00**

Footnote 1: Monthly remittance calculation:
Monthly remittance = 1/ 12 of 2022 annual funding contribution per section II.2.b.

Payment Requirement: The first payment is due by 1/15/2022 via ACH to Lead IOU. Payments #2,3,4,5,6,7,8,9,10,11,12 are due by the 15th of each month WITHOUT further notification from Lead IOU.

Footnote 3: Exhibit B 2022 Program Budget and IOU Funding Contribution of the CFA

Exhibit B
2022 Program Budget and IOU Funding Contribution

Party	2022 Annual Proportional Contribution	2022 Annual Funding Contribution
SCE	32.08%	$4,201,532.04
SDG&E	13.96%	$1,828,347.48
SoCalGas	8.36%	$1,094,912.96
PG&E	45.60%	$5,972,252.52
2022 Program Annual Budget	**100%**	**$13,097,045.00**

For any questions, please contact Kenneth Pitsko at kpitsko@sdge.com. Thank you.

SW PLA

SDGE

2022 Payment Schedule

SDGE SW Plug-Load and Appliance Program

Parties	Annual Funding Contribution per Load-Share	2022 Annual Funding Contribution	2022 Payments		
			Payment #1	Payment #2	Total
			2022-11	2022-12	
PG&E	45.60%	$3,098,937.46	$1,549,468.73	$1,549,468.73	$3,098,937.46
SDG&E	13.96%	$948,709.80	$474,354.90	$474,354.90	$948,709.80
SCE	32.08%	$2,180,129.69	$1,090,064.85	$1,090,064.84	$2,180,129.69
SCG	8.36%	$568,138.53	$284,069.27	$284,069.26	$568,138.53
Total	**100.00%**	**$6,795,915.48**	**$3,397,957.75**	**$3,397,957.73**	**$6,795,915.48**

Footnote 1: Monthly remittance calculation:

Monthly remittance = 1 / 2 of 2022 annual funding contribution per section II.2.b.

Payment Requirement: The first payment is due by 11/15/2022 via ACH to Lead IOU. Payment #2 is due by 12/15/2022 WITHOUT further notification from Lead IOU.

Footnote 3: Exhibit B 2022 Program Budget and IOU Funding Contribution of the CFA

Party	2022 Proportional Contribution per Load-Share	2022 Annual Funding Contribution
SCE	32.08%	$2,180,129.69
SDG&E	13.96%	$948,709.80
SoCalGas	8.36%	$568,138.53
PG&E	45.60%	$3,098,937.46
2022 Program Budget	**100.00%**	**6,795,915.48**

For any questions, please contact Kenneth Pitsko at kpitsko@sdge.com. Thank you.

APPENDIX C – REVISIONS TO SW PROGRAMS

Revisions to Other IOUs Previous Annual Reports for SW Programs

2020 Statewide Codes & Standards Claims (PG&E Lead IOU)

In December 2022, PG&E identified issues related to 2020 Statewide (SW) Codes & Standards (C&S) annual claims. After discussion with CPUC Staff, it was determined that the CEDARS system could not be reopened to allow adjustments to 2020 program year (PY) claims. Due to this limitation, PG&E is reporting the impacts of the discrepancy within their 2022 Energy Efficiency Annual Report and SDG&E is following suit.

PG&E did not appropriately account for a contribution of $1M LADWP made to the Codes & Standards programs in 2020, as well as some resulting changes to co-funding percentages by the IOUs. SDG&E requested to maintain their co-funding budget contribution level of $1.8M. The resulting final SW Expenditures allocation to SDG&E and new SDG&E allocation percentage is noted in Table 1: 2020 C&S Updated Expenditure Allocations.

Table 1: 2020 C&S Updated Expenditure Allocations (Table and data provided by PG&E to all IOUs)

IOU	PG&E	**SDG&E**	SCE	SCG	Total
Total 2020 Expenditures Filed in CEDARS	Not provided	**$1,836,438.00**	Not provided	Not provided	$14,088,967
LADWP Contribution to C&S	Not provided	**n/a**	Not provided	Not provided	$(1,000,000.00)
New 2020 SW IOU Expenditures, less LADWP contribution	$5,953,829.55	**$1,836,438.00**	$4,198,941.19	$1,099,758.00	$13,088,966.74

New Allocation Percentages of Expenditures	45.49%	**14.03%**	32.08%	8.40%	100.00%

To calculate energy savings in MMTherms and GWh, it is necessary to determine the new appropriate allocation factors for each IOU. This is performed by splitting the allocated expenditures according to each IOU's electric and gas split percentages from 2020 PY, and then determining the allocation weighting in both the electric and gas categories. This calculation is shown in Table 2: Electric and Gas Allocation Percentage Calculation.

Table 2: Electric and Gas Allocation Percentage Calculation (Table and data provided by PG&E to all IOUs)

IOU	PG&E	SDG&E	SCE	SCG	Total
Electric PPP	80%	**90%**	100%	0%	n/a
Gas PPP	20%	**10%**	0%	100%	n/a
Expenditures for kWh	$4,763,063.64	**$1,652,794.20**	$4,198,941.19	-	$10,614,799.03
Expenditures for Therm	$1,190,765.91	**$183,643.80**	-	$1,099,758.00	$2,474,167.71
Electric Allocation Percentage	44.87%	**15.57%**	39.56%	0.00%	100.00%
Gas Allocation Percentage	48.13%	**7.42%**	0.00%	44.45%	100.00%

Each IOU then received re-allocated savings values. This calculation is done by taking the total electric or gas savings and multiplying it by the individual electric and gas allocation factors shown in Table 2 shows this calculation and the difference to what is filed in CEDARS for each IOU and energy source.

Table 3: New 2020 C&S Energy Savings Claims (Table and data provided by PG&E to all IOUs)

IOU	CEDARS 2020 Claims			New 2020 Claim			Difference		
	GWh	MW	MMTherm	GWh	MW	MMTherm	GWh	MW	MMTherm
PG&E	1,413.61	236.81	19.82	1,419.22	237.75	19.87	5.61	0.94	0.05
SDG&E	**492.28**	**82.47**	**3.07**	**492.47**	**82.50**	**3.06**	**0.19**	**0.03**	**(0.01)**
SCE	1,256.94	210.57	-	1,251.13	209.60	-	(5.81)	(0.97)	-
SCG	-	-	18.37	-	-	18.35	-	-	(0.02)
Total	3,162.83	529.85	41.29	3,162.83	529.85	41.29	-	-	-

PG&E calculated the effect this re-allocation had on each IOU making their C&S goals in Table 4: New 2020 C&S Goal Attainment Percentage. This re-allocation did not change any IOUs conclusion for meeting their C&S goal for 2020.

Table 4: New 2020 C&S Goal Attainment Percentage

IOU	2020 C&S Goal			New 2020 Claim			Goal Attainment		
	GWh	MW	MMTherm	GWh	MW	MMTherm	GWh	MW	MMTherm
PG&E	646.00	131.00	13.00	1,419.22	237.75	19.87	220%	181%	153%
SDG&E	**151.00**	**31.00**	**1.50**	**492.47**	**82.50**	**3.06**	**326%**	**266%**	**204%**
SCE	667.00	131.00	-	1,251.13	209.60	-	188%	160%	-
SCG	-	-	21.00	-	-	18.35	-	-	87%
Total	1,464.00	293.00	35.50	3,162.83	529.85	41.29	216%	181%	116%

SDG&E notes that the changes noted by PG&E have been provided herein in lieu of PG&E filing an amended 2020 Annual Report Appendix A Tables file. If these changes were reflected in an amended Annual Report Appendix A Tables file, the impacted SDG&E 2020 Annual Report tables would be: T-1 Savings&Demand(Net), T-2 EnvImpacts(Net), T-4 CE(Net), T-5 RatepayerImpcts, & T-6 SavingsUseCategory.

2021 Statewide Upstream Lighting Claims (SCE Lead IOU)

In February 2023 SCE identified changes required to their 2021 program year claims for the statewide upstream lighting program. SCE identified 85 projects that did not include the required Title 24 compliance documentation and zeroed these projects out. SCE contacted CPUC staff, and determined it was not feasible to reopen CEDARS to correct 2021 claims. Instead, SCE provided itemized details for each individual claim in their amended 2021 annual report appendices in the CEDARS document library. SDG&E notes below the impact of these 85 projects on the 2021 energy savings claims. The revisions do not change SDG&E's ability to make its energy savings goals in 2021. Table 5 demonstrates the impacts to SDG&E's portion of the upstream lighting program, and Table 6 shows the impact on the complete SDG&E portfolio, excluding codes & standards.

Table 5: 2021 Impacts to SDG&E Program ID SDGE_SW_UL

PRG ID:	2021 CEDARS	2021 Amended	Difference
Expenditure	$134,936	-	($134,936)
FirstYearNetkWh	73,203.6	-	(73,203.6)
FirstYearNetkW	10.15	-	(10.15)
Therms	(220.2)	-	220.2
Benefits	$66,172	-	($66,172)
TRC Costs	$172,047	-	($172,047)
PAC Costs	$134,936	-	($134,936)
TRC	0.38	-	(0.38)
PAC	0.49	-	(0.49)

Table 6: 2021 Impacts to SDG&E Portfolio, Excluding Codes & Standards

SDG&E 2021 Portfolio (w/o Codes & Standards)	2021 CEDARS Claims	2021 Adjusted Claims	Difference*	% Diff
Expenditure	$36,836,551	$36,701,615	($134,936)	(0.37%)
FirstYearNetkWh	68,601,744	68,528,541	(73,203)	(0.11%)
FirstYearNetkW	10,289	10,279	(10)	(0.10%)
Therms	2,464,957	2,465,177	220	0.01%
Benefits	$27,317,461	$27,251,289	($66,172)	(0.24%)
TRC Costs	$45,250,020	$45,077,974	($172,047)	(0.38%)
PAC Costs	$38,809,786	$38,674,850	($134,936)	(0.35%)

TRC	0.60	0.60	0.00	0.14%
PAC	0.70	0.70	0.00	0.11%

*Difference Column – 2021 Adjusted Claims – 2021 CEDARS Claims

SDG&E notes that the expenditures and savings changes made by SCE have been provided in a summarized form. The 2021 Annual Report Appendix A tables that are impacted for these expenditure and savings changes include: T-1 Savings&Goals, T-3 EnvImpacts, T-4 Expenses, T-5 Programs, T-6 Net CE, T-7 Bill Impacts, T-8 SavingsUseCategory, and T-11 Cap & Target.

APPENDIX D – REVISIONS TO SDG&E'S 2021 ANNUAL REPORT

Revised 2021 Annual Report Appendix A Table T-3 Environment Impacts

SDG&E discovered an error for both NOx and PM10 columns of table found in the T-3 Environmental Impacts tab of SDGE's Attachment A spreadsheet. The CEDARS output expresses NOx and PM10 in pounds. The table for NOx and PM10 columns as submitted are expressed in pounds and should be converted to Tons. The revised table does not include the impacts of SCE's 2021 Statewide Lighting changes.

As Filed Table T-3 2021 Annual Report

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.

Revised Table T-3 2021 Annual Report

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	3	3	24	24	1	1	9	9
Building Envelope	5,022	5,022	112,200	112,198	1	1	15	15	0	0	5	5
Compressed Air	208	208	3,928	3,928	0	0	1	1	0	0	0	0
Commercial Refrigeration	8,934	7,987	85,326	79,912	3	2	23	21	1	1	9	8
Codes & Standards	6,933	6,933	140,879	140,879	2	2	35	35	1	1	13	13
Food Service	535	348	6,512	4,242	0	0	3	2	0	0	0	0
HVAC	15,141	14,471	235,819	225,090	4	3	53	47	1	1	15	15
Irrigation					0	0	0	0	0	0	0	0
Lighting	83,939	83,727	1,637,171	1,635,648	27	27	412	412	10	10	154	154
Non-Savings Measure					0	0	0	0	0	0	0	0
Process Distribution	3	2	10	6	0	0	0	0	0	0	0	0
Process Drying					0	0	0	0	0	0	0	0
Process Heat	438	396	6,687	6,032	0	0	2	1	0	0	0	0
Process Refrigeration					0	0	0	0	0	0	0	0
Recreation	1,484	1,415	18,082	17,274	0	0	5	5	0	0	2	2
Service					0	0	0	0	0	0	0	0
Service and Domestic Hot Water	23,355	19,539	201,920	178,867	5	3	30	20	0	0	2	2
Whole Building	30,359	31,222	329,342	330,533	10	11	59	60	2	2	20	20
TOTAL	184,949	179,867	2,868,672	2,825,403	55	53	660	642	17	17	229	227

SOURCE: CEDARS CET Outputs

Notes:

(1) All Environmental Impacts are net with 5% market effects.

(2) Excludes Energy Savings Assistance (ESA) Program.

Revised 2021 Annual Report Appendix A Table T-6 Net Cost Effectiveness

CEDARS Cost Effectiveness calculation for SDG&E's TRC and PAC data without Codes and Standards effects included some of the local Codes and Standards program costs and SDG&E SW administration costs. SDG&E provides the corrected TRC and PAC in the following table. For Table T-6, a discrepancy was noted for Codes & Standards cost classification, which was footnoted in the 2021 report.

As filed Table T-6 2021 Annual Report

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.

Revised table T-6 2021 Annual Report based on Codes & Standards

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 ($/kWh) (2)	PAC Cost ($/therm) (2)
Total Portfolio w/o C&S	$ 45,250,020	$ 27,317,461	$ (17,932,559)	0.60	$ 38,809,786	0.70		0.22	0.47
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) NA--This is not applicable because the adopted cost methodology does not provide information to calculate a meaningful value for PAC Cost per kW.

(2) SDGE PAC annual cost split is 90% (electric) 10% (gas) based on 2019 authorized funding electric/gas allocations.

To calculate the levelized PAC Cost over the discounted net lifecycle savings (kWh or Therm) = Total PAC Cost (kWh or Therm)/Discounted Net Lifecycle Savings (kWh or therm

APPENDIX E – SDG&E 2022 Program List

Program ID	Program Name	Date Added	Date Removed
SDGE_SW_CSA_Appl	SW Codes & Standards Advocacy - State Appliance Standards		
SDGE_SW_CSA_Appl_PA	SW Codes & Standards Advocacy - State Appliance Standards (Utility)		
SDGE_SW_CSA_Bldg	SW Codes & Standards Advocacy - State Building Codes		
SDGE_SW_CSA_Bldg_PA	SW Codes & Standards Advocacy - State Building Codes (Utility)		
SDGE_SW_CSA_Natl	SW Codes & Standards Advocacy - National Codes & Standards Advocacy		
SDGE_SW_CSA_Natl_PA	SW Codes & Standards Advocacy - National Codes & Standards Advocacy (Utility)		
SDGE_SW_ETP_Elec	SW Emerging Technologies - Electric	1/1/2022	
SDGE_SW_ETP_Elec_PA	SW Emerging Technologies - Electric (Utility)	1/1/2022	
SDGE_SW_ETP_Gas	SW Emerging Technologies - Gas		
SDGE_SW_ETP_Gas_PA	SW Emerging Technologies - Gas (Utility)		
SDGE_SW_FS	SW Foodservice Point of Sale Program		
SDGE_SW_FS_PA	SW Foodservice Point of Sale Program (Utility)		
SDGE_SW_HVAC_Up	SW HVAC Upstream Program		
SDGE_SW_HVAC_Up_PA	SW HVAC Upstream Program (Utility)		
SDGE_SW_IP_Colleges	SW Higher Education	1/1/2022	
SDGE_SW_IP_Colleges_PA	SW Higher Education (Utility)	1/1/2022	
SDGE_SW_IP_Gov	SW Institutional Partnerships: DGS & DoC		
SDGE_SW_IP_Gov_DGS	SW State of CA Partnership		1/1/2022
SDGE_SW_IP_Gov_DGS_PA	SW State of CA Partnership (Utility)		1/1/2022
SDGE_SW_IP_Gov_DoC	SW CA Department of Corrections Partnership		1/1/2022
SDGE_SW_IP_Gov_DoC_PA	SW CA Department of Corrections Partnership (Utility)		1/1/2022
SDGE_SW_IP_Gov_PA	SW Institutional Partnerships: DGS & DoC (Utility)		
SDGE_SW_MCWH	SW Midstream Commercial Water Heating		
SDGE_SW_MCWH_PA	SW Midstream Commercial Water Heating (Utility)		
SDGE_SW_NC_NonRes	SW New Construction Non Residential - Mixed Fuel		1/1/2022
SDGE_SW_NC_NonRes_Ag_elec	SW New Construction Non Residential - Agricultural - All Electric	1/1/2022	
SDGE_SW_NC_NonRes_Ag_elec_PA	SW New Construction Non Residential - Agricultural - All Electric (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Ag_mix	SW New Construction Non Residential - Agricultural - Mixed Fuel	1/1/2022	
SDGE_SW_NC_NonRes_Ag_mix_PA	SW New Construction Non Residential - Agricultural - Mixed Fuel (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Com_el	SW New Construction Non Residential - Commercial - All Electric	1/1/2022	
SDGE_SW_NC_NonRes_Com_el_PA	SW New Construction Non Residential - Commercial - All Electric (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Com_m	SW New Construction Non Residential - Commercial - Mixed Fuel	1/1/2022	
SDGE_SW_NC_NonRes_Com_m_PA	SW New Construction Non Residential - Commercial - Mixed Fuel (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Ind_elec	SW New Construction Non Residential - Industrial - All Electric	1/1/2022	
SDGE_SW_NC_NonRes_Ind_elec_PA	SW New Construction Non Residential - Industrial - All Electric (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Ind_mix	SW New Construction Non Residential - Industrial - Mixed Fuel	1/1/2022	
SDGE_SW_NC_NonRes_Ind_mix_PA	SW New Construction Non Residential - Industrial - Mixed Fuel (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_PA	SW New Construction Non Residential - Mixed Fuel (Utility)		1/1/2022
SDGE_SW_NC_NonRes_Pub_ele	SW New Construction Non Residential - Public - All Electric	1/1/2022	
SDGE_SW_NC_NonRes_Pub_ele_PA	SW New Construction Non Residential - Public - All Electric (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Pub_mi	SW New Construction Non Residential - Public - Mixed Fuel	1/1/2022	
SDGE_SW_NC_NonRes_Pub_mi_PA	SW New Construction Non Residential - Public - Mixed Fuel (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Res_ele	SW New Construction NonResidential - Residential - All Electric	1/1/2022	
SDGE_SW_NC_NonRes_Res_ele_PA	SW New Construction NonResidential - Residential - All Electric (Utility)	1/1/2022	
SDGE_SW_NC_NonRes_Res_mi	SW New Construction NonResidential - Residential - Mixed Fuel	1/1/2022	
SDGE_SW_NC_NonRes_Res_mi_PA	SW New Construction NonResidential - Residential - Mixed Fuel (Utility)	1/1/2022	
SDGE_SW_NC_Res_electric	SW New Construction Residential - All Electric	1/1/2022	
SDGE_SW_NC_Res_electric_PA	SW New Construction Residential - All Electric (Utility)	1/1/2022	
SDGE_SW_NC_Res_mixed	SW New Construction Residential - Mixed Fuel	1/1/2022	
SDGE_SW_NC_Res_mixed_PA	SW New Construction Residential - Mixed Fuel (Utility)	1/1/2022	
SDGE_SW_PLA	SW Plug Load and Appliances		
SDGE_SW_PLA_PA	SW Plug Load and Appliances (Utility)		
SDGE_SW_UL	SW Lighting Program		
SDGE_SW_UL_PA	SW Lighting Program (Utility)		
SDGE_SW_WET_CC	SW WET Career Connections		
SDGE_SW_WET_CC_PA	SW WET Career Connections (Utility)		
SDGE_SW_WET_Work	SW WE&T Career & Workforce Readiness (CWR)		
SDGE_SW_WET_Work_PA	SW WE&T Career & Workforce Readiness (CWR) (Utility)		
SDGE_SW_WP	SW Downstream Water/Wastewater Pumping Program	1/1/2022	
SDGE_SW_WP_PA	SW Downstream Water/Wastewater Pumping Program (Utility)	1/1/2022	
SDGE3201	SW-CALS-Energy Advisor-HEES, UAT		
SDGE3204	SW-CALS-Plug Load and Appliances-POS Rebates		1/1/2022
SDGE3209	SW-CALS-EUC WHRP-Advanced		1/1/2022
SDGE3213	SW-CALS - CAHP/ESMH-CA Advanced Homes		1/1/2022
SDGE3217	SW-COM-Customer Services- Audits NonRes		
SDGE3220	SW-COM-Calculated Incentives-Calculated		
SDGE3222	SW-COM-Calculated Incentives-Savings by Design		
SDGE3223	SW-COM-Deemed Incentives-Commercial Rebates		
SDGE3224	SW-COM-Deemed Incentives-HVAC Commercial		
SDGE3226	SW-COM Direct Install		
SDGE3227	SW-IND-Strategic Energy Management		
SDGE3229	SW-IND-Customer Services-Audits NonRes		
SDGE3231	SW-IND-Calculated Incentives-Calculated		
SDGE3233	SW-IND-Deemed Incentives		
SDGE3234	SW-AG-Customer Services-Benchmarking		1/1/2022
SDGE3235	SW-AG-Customer Services-Pump Test Services		1/1/2022
SDGE3236	SW-AG-Customer Services-Audits		
SDGE3237	SW-AG-Calculated Incentives-Calculated		
SDGE3239	SW-AG-Deemed Incentives		
SDGE3246	SW-ET-Technology Introduction Support		
SDGE3247	SW-ET-Technology Assessment Support		
SDGE3248	SW-ET-Technology Deployment Support		
SDGE3251	SW C&S - Compliance Enhancement		
SDGE3252	SW C&S - Reach Codes		
SDGE3253	SW C&S - Planning Coordination		
SDGE3254	Local WE&T-Integrated Energy Education & Training (IEET)		
SDGE3255	SW-WE&T-Connections		1/1/2022
SDGE3260	Local-IDSM-ME&O-Local Marketing (EE)		
SDGE3261	Local-IDSM-ME&O-Behavioral Programs (EE)		
SDGE3262	SW-FIN-On-Bill Finance		
SDGE3264	SW-FIN-New Finance Offerings		
SDGE3266	LInstP-CA Department of Corrections Partnership		1/1/2022
SDGE3267	LInstP-California Community College Partnership		
SDGE3268	LInstP-UC/CSU/IOU Partnership		
SDGE3269	LInstP-State of California /IOU		1/1/2022
SDGE3270	LInstP-University of San Diego Partnership		1/1/2022
SDGE3271	LInstP-San Diego County Water Authority Partnership		1/1/2022
SDGE3272	LGP- City of Chula Vista Partnership		1/1/2022
SDGE3273	LGP- City of San Diego Partnership		1/1/2022
SDGE3274	LGP- County of San Diego Partnership		1/1/2022
SDGE3275	LGP- Port of San Diego Partnership		1/1/2022
SDGE3276	LGP- SANDAG Partnership		1/1/2022
SDGE3278	LGP- Emerging Cities Partnership		1/1/2022
SDGE3280	3P-IDEEA		
SDGE3281	EM&V-Evaluation Measurement & Verification		
SDGE3282	SW-IDSM-IDSM		1/1/2022
SDGE3291	SW-Ind-Customer Services-Pump Test Services		1/1/2022
SDGE3292	SW-Com-Customer Services-Pump Test Services		1/1/2022
SDGE3308	Finance Pilot ME&O OBR		
SDGE3312	Finance IT OBR		
SDGE3317	HOPPs - Building Retro-Commissioning		
SDGE3322	3P-Streamlined Ag Efficiency (SAE)		
SDGE3325	SW-FIN-Finance Pilots Credit Enhancement		
SDGE4001	Single Family Program		
SDGE4002	Multi Family Program		
SDGE4003	Commercial Small Customer Services (<20KW) Program		
SDGE4004	Commercial Large Customer Services (>20KW) Program		
SDGE4009	Agricultural Growers Services Program		
SDGE4010	Local Government Customers Program		
SDGE4011	K-12 Customer Services Program		
SDGE4012	Federal Customer Services Program		
SDGE4061	Facility Assessment Services Program		1/1/2022
SDGE-ESAP	Energy Savings Assistance Program (ESA)		
SDGE-ESPI	ESPI		
SDGE-GRCL	GRC Labor Loaders		
SW_HVAC_Up	SW HVAC Upstream Program		
SW_PLA	SW Plug Load and Appliances		