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PACIFIC GAS AND ELECTRIC COMPANY

ENERGY EFFICIENCY 2024 BUSINESS-PORTFOLIO PLAN

PG&E ENERGY EFFICIENCY 2024-2031 STRATEGIC BUSINESS PLAN

PREPARED TESTIMONY

EXHIBIT 1

PACIFIC GAS AND ELECTRIC COMPANY
ENERGY EFFICIENCY 2024 BUSINESS-PORTFOLIO PLAN
PREPARED TESTIMONY

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PG&E'S VISION FOR
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A. Introduction

In compliance with Decision (D.) 21-05-031, Pacific Gas and Electric Company (PG&E) files this Energy Efficiency (EE) Application requesting an authorized budget cap for its eight-year strategic business plan covering program years 2024-2031, and a four-year revenue requirement request for a program portfolio plan covering 2024-2027.[1] PG&E's testimony generally aligns with and responds to the prompts in the template created by the Energy Division (Energy Division template), pursuant to D.21-05-031.[2]

This Exhibit presents PG&E's strategic business plan and annual budgets for its EE portfolio for 2024-2031. This Exhibit also provides PG&E's recommendations for new or modified EE policy.

With PG&E's eight-year strategic business plan as the foundation, Exhibit 2 presents PG&E's four-year portfolio plan (2024-2027).

1. PG&E's Core Values

PG&E is honored to serve nearly 16 million people across northern and central California with some of the nation's cleanest energy.[3] At PG&E, we believe customer service is at the core of everything we do, and we are guided by our core purpose of delivering for our hometowns, serving our planet, and leading with love. PG&E's responsibility as an energy provider to our customers goes beyond our core mission of providing safe, reliable, affordable, and clean energy. We believe that we have a responsibility to build a better future for everyone whose lives we touch. We will measure

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1 *Assessment of Energy Efficiency Potential and Goals and Modification of Portfolio Approval and Oversight Process,* D.21-05-031, Ordering Paragraph (OP) 5, p. 81.

2 D.21-05-031, OP 6, p. 82. While PG&E generally aligns with the Energy Division template, where necessary, PG&E includes additional information and/or integrates similar sections . See October 20, 2021 Email from Energy Division "R.13-11-005 Energy Efficiency 2024-2031 Business Plan Templates".

3 Information from: https://www.pgecorp.com/corp_responsibility/reports/2021/pf01_pge_overview.html.

our progress along three areas – focusing on how our programs impact the people we serve, the planet we inhabit, and California's prosperity. All these changes are done with one focus in mind: to better serve our customers.

PG&E's EE portfolio is an integral piece of protecting the environment and creating a better energy future for our customers. We believe clean energy should be affordable for and inclusive of all economic backgrounds. Our wide range of EE programs help customers reduce their energy use and save money. PG&E's EE Application details the next generation of our EE portfolio, which is positioned to deliver on these privileges.

2. PG&E's Vision for EE in California

PG&E's vision is for EE to help keep customer energy bills affordable, reduce energy demand on the grid, build customer resiliency to climate change, and advance building decarbonization in California. EE is integral to energy sustainability, which is why PG&E has worked for more than four decades to support customer efforts to reduce energy usage. At PG&E we are reaching for new heights pursuing California's clean energy goals while balancing affordability and equity.

EE is a key component of a much broader clean energy and building decarbonization strategy for California.[4] California has passed significant legislation in the pursuit of carbon neutrality,[5] including Senate Bill (SB) 100 (2018),[6] which requires renewable energy and zero-carbon resources to supply 100 percent of total electric retail sales in California by 2045,[7] and Executive Order B-55-18 calling for economy-wide carbon neutrality by 2045.[8] The California Energy Commission's (CEC) 2019 EE Action Plan

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4 Other key components include resources such as distributed solar generation and energy storage.

5 "Carbon neutrality means that all greenhouse gas (GHG) emissions emitted into the atmosphere are balanced in equal measure by GHGs that are removed from the atmosphere, either through carbon sinks or carbon capture and storage." From *Achieving Carbon Neutrality in California,* Energy and Environmental Economics, Inc. (E3), p. 1.

6 https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100.

7 *Ibid.*

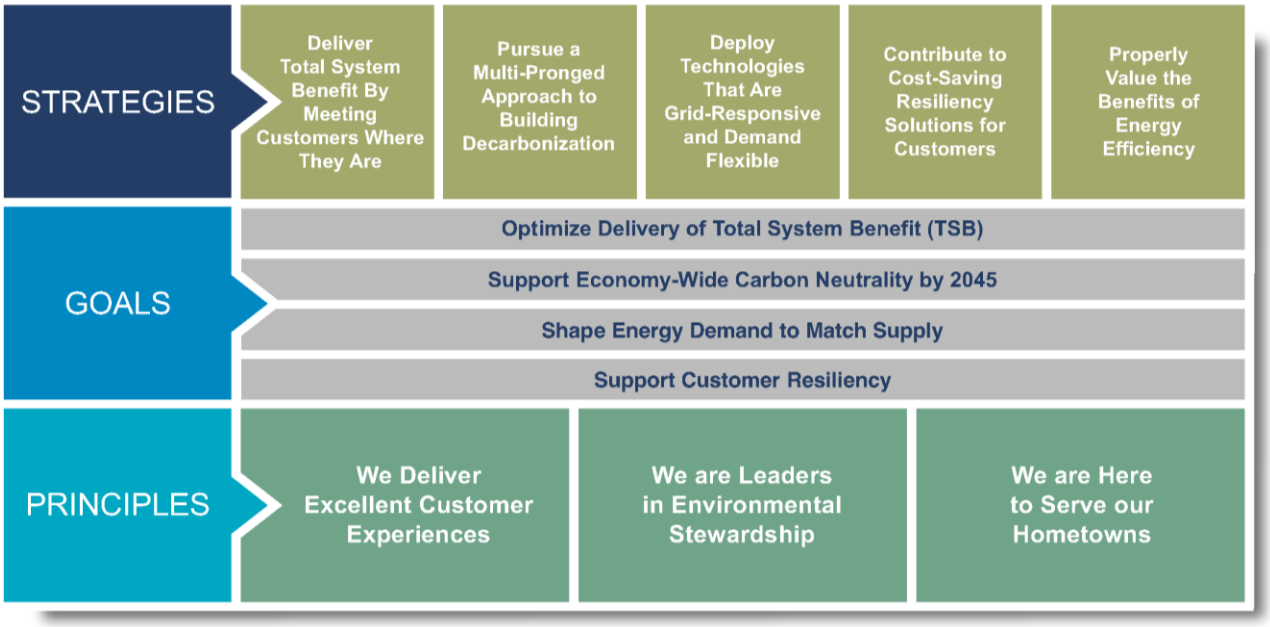
8 https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf.

affirmed that, “energy efficiency is a key piece of California’s efforts to lessen the impacts of climate change.”[9] PG&E’s 2024-2031 EE strategic business plan supports the goals of zero-carbon electricity and economy-wide carbon neutrality, and will work as part of the solution to combat climate change through EE and building decarbonization. Exhibit 2 presents how PG&E plans to make progress towards overcoming these challenges in 2024-2027.

PG&E’s EE strategic business plan for 2024-2031 is built on portfolio principles, goals, and strategies that enable us to deliver on both our commitments and our vision. PG&E’s three portfolio principles lay the foundation for our portfolio’s goals and strategies. These principles represent our portfolio’s core values that are present in all portfolio activities. PG&E pursues four portfolio goals to achieve key milestones by the end of 2027 and 2031. These goals and their associated outcomes are implemented through our portfolio’s strategies. PG&E’s five portfolio strategies guide the broad implementation direction of our portfolio’s activities. These strategies are key for guiding both where and how to direct our portfolio’s funding. See Figure 1-1 for the overview of PG&E’s portfolio principles, goals, and strategies.

9 CEC, *2019 California Energy Efficiency Action Plan*, December 2019, p. 1.

FIGURE 1-1
SUMMARY OF PG&E'S EE PORTFOLIO GUIDING PRINCIPLES, GOALS, AND STRATEGIES



3. Background and Purpose of Application

In May 2021, the California Public Utilities Commission (CPUC or Commission) issued D.21-05-031 that adopted three major changes in EE policy: (1) a new goals metric, Total System Benefit (TSB); (2) an approach to "segmenting" EE portfolios by program purpose; and (3) a modified portfolio process that requires each EE portfolio administrator (PA)[10] to file an application every four years that includes a four-year detailed program portfolio plan and an eight-year strategic business plan.[11]

Moving to TSB as the new goals metric and segmenting EE portfolios by program purpose can enable PAs to provide greater value to customers, help achieve California's long term climate goals and policy objectives, better support equity communities, and focus EE programs on the full range of benefits they can provide to the electric and gas systems. PG&E

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10 PG&E uses the term "portfolio administrator", rather than "program administrator", to refer to those administering portfolios of EE programs primarily implemented by third parties.

11 *Assessment of Energy Efficiency Potential and Goals and Modification of Portfolio Approval and Oversight Process,* D.21-05-031, pp. 2-3.

leverages this framework to deliver on the broad portfolio goals outlined in this eight-year strategic business plan.

TSB, defined as "the sum of the benefit that a measure provides to the electric and natural gas systems,"[12] replaces energy savings and peak demand goals beginning in 2024.[13] TSB expresses, in Net Present Value dollars, the lifecycle energy, ancillary services, generation capacity, transmission and distribution capacity, and greenhouse gas (GHG) benefits of EE activities, on an annual basis.[14] TSB ties EE goals directly to the avoided cost value of EE savings, capturing the benefits of saving energy during high value hours of the day and year. It is also fuel agnostic and can facilitate the pursuit of building electrification through fuel substitution. In this application, PG&E explains how it will optimize its portfolio to deliver TSB for California.

The second policy change directs PAs to assign programs in their EE portfolios to categories, or "segments," based on their primary purpose.[15] There are three segments: resource acquisition (RA), equity, and market support (MS). Codes and Standards (C&S) programs are considered a separate category. Cost-effectiveness requirements apply to the RA segment[16] while the equity and MS segments must adhere to a budget cap.[17] Because cost-effectiveness requirements apply only to the RA

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12 D.21-09-037, Conclusions of Law (COL) 5, p. 28

13 D.21-05-031, OP 4, p. 81.

14 CPUC TSB Technical Guidance, Version 1.2, October 25, 2021, p. 1. See also p. 7:

> "The ACC produces hourly avoided cost values, and the ACC output table for electric avoided costs instructs the CET whether to use input kW or kWh values, depending on when the energy is saved. The avoided cost rate is based on price forecasts, measure impact profiles, climate zones, program administrator, etc. Benefits associated with avoided kW are only accrued in peak hours, and these benefits flow into the measure benefits calculation outputted by the CET."

15 D.21-05-031, OP 2, p. 81.

16 D.21-05-031, OP 3, p. 81 states,

> "Beginning in program year 2022, energy efficiency program administrators who are investor-owned utilities or community choice aggregators shall ensure that the forecasted benefits exceed the costs of the resource acquisition segments of their portfolios, as measured by the Total Resource Cost test, without considering Codes and Standards programs."

17 D.21-05-031, OP 3-4, p. 81 and p. 16.

segment, segmentation addresses the increased pressures IOUs experience trying to maintain cost-effective EE portfolios "while also delivering a balanced portfolio that meets all of the Commission's numerous policy objectives."[18] PG&E continues to balance cost-effective program delivery with critical policy objectives through equity and MS programs. PG&E presents an EE portfolio with a RA segment that is overall forecasted to achieve a cumulative Total Resource Cost (TRC) ratio greater than 1.0 for each of the four-year portfolio cycles. PG&E has balanced its RA segment in line with the CPUC's expectations[19] and through the portfolio management strategies discussed in section E.2 below and Exhibit 2, Chapter 5, PG&E will continue to focus on cost-effective program delivery through effective program performance management. See Exhibit 2, Chapter 3 for PG&E's portfolio segmentation strategy.

This eight-year strategic business plan provides high-level descriptions of the following six areas requested by the Energy Division:[20] (1) a description of PG&E's service territory; (2) the desired outcomes for PG&E's EE portfolio; (3) major portfolio strategies to achieve the desired outcomes; (4) portfolio management strategies such as portfolio segmentation, sector strategies, budget distribution, outsourcing, and portfolio coordination; (5) evaluation, measurement and verification (EM&V) strategies; and (6) alignment with legislative and CPUC requirements and relevant action plans.

a. Summary of Request

PG&E requests that the Commission approve its eight-year authorized budget cap request for 2024-2031 of approximately $2.8 billion, which includes two four-year portfolio cycles. The

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18 D.21-05-031, p. 10.

19 D.21-05-031, at p. 22 in discussion regarding TRC ratio requirement of 1.0 or greater:

> "This does not mean that each individual resource acquisition program must be cost-effective on its own. Program administrators may balance their resource acquisition programs within the resource acquisition segment of their portfolios to ensure that the segment overall meets the 1.0 criteria."

20 *EE Business Plan and Application Template – Final from ED with EMV*, received via Energy Efficiency Proceeding Service List Rulemaking (R.) 13-11-005 on October 20, 2021.

authorized budget cap includes approximately $566 million requested on behalf of Regional Energy Networks (RENs) and Community Choice Aggregators (CCAs) within PG&E's territory.[21]

The first four-year portfolio cycle covers 2024-2027 and includes a revenue requirement of approximately $1.4 billion inclusive of approximately $272.7 million requested on behalf of RENs and CCAs within PG&E's territory. See Chapter 2 for detail regarding the eight-year authorized budget cap request. See Exhibit 2, Chapter 2 for the 2024-2027 forecast methodology.

b. Support for Request

PG&E's request for 2024-2031 enables PG&E to achieve cumulative TSB of approximately $1.9 billion and a TRC ratio[22] for its RA portfolio of 1.16. It also enables PG&E to support legislative and climate priorities for California such as doubling EE and reducing GHG emissions and executing on the portfolio strategies further described below. Section E.4 below provides more information on the alignment of PG&E's strategic business plan with legislative and CPUC requirements and relevant action plans.

c. Organization of the Remainder of This Chapter

- Section B – Description of PG&E's Service Territory;
- Section C – Principles of PG&E's EE Portfolio;
- Section D – PG&E's EE Portfolio Goals and Desired Outcomes; and
- Section E – PG&E's EE Portfolio Strategies for 2024-2031.

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21 This request reflects the budget needs for 2024-2031 of RENs and CCAs approved for PA status as of January 14, 2022. This includes Bay Area Regional Energy Network (BayREN), CleanPowerSF, Marin Clean Energy (MCE), San Jose Clean Energy (SJCE) and Tri-County Regional Energy Network (3C-REN). Should REN or CCA filing budgets differ from what is provided, or should REN or CCA PA statuses change, PG&E's authorized budget cap request will need to be amended. PG&E's may need to submit supplemental or revised testimony. See Chapter 3 for PG&E's proposal to account for changes in REN and/or CCA PA status.

22 California Standard Practice Manual discusses TRC beginning on p. 18. https://www.cpuc.ca.gov/-/media/cpuc-website/files/uploadedfiles/cpuc_public_website/content/utilities_and_industries/energy_-_electricity_and_natural_gas/cpuc-standard-practice-manual.pdf.

B. Description of PG&E's Service Territory

PG&E delivers some of the nation's cleanest energy[23] to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California. There are approximately 5.5 million electric customer accounts and 4.5 million natural gas customer accounts.[24] In 2021, PG&E established a Regional Service Model that has five regions:

1) North Coast;
2) North Valley/Sierra;
3) Bay Area;
4) South Bay/Central Coast; and
5) Central Valley.

PG&E's EE portfolio intends to work within these five regions to address customer and community specific needs. See Figure 1-2 for PG&E's regionalization map.

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23 About 85 percent of the electricity delivered is GHG-free. *PG&E 2021 Corporate Sustainability Report.*

24 *PG&E Corporate Sustainability* Report, as of December 31, 2020, 4.8 million residential and 0.7 million commercial, industrial, and other electric distribution accounts; 4.3 million residential and 0.2 million commercial and industrial natural gas distribution accounts.

FIGURE 1-2
PG&E REGIONALIZATION MAP

The new regions include:

NORTH COAST
Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Sonoma and Trinity

NORTH VALLEY AND SIERRA
Butte, Colusa, El Dorado, Glenn, Lassen, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Solano, Sutter, Tehama, Yolo and Yuba

BAY AREA
Alameda, Contra Costa, San Francisco and San Mateo

SOUTH BAY AND CENTRAL COAST
Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Clara and Santa Cruz

CENTRAL VALLEY
Alpine, Amador, Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Bernardino (Gas Only), San Joaquin, Stanislaus, Tulare and Tuolumne

PG&E provides brief discussions on certain areas of diversity within our territory that provide opportunities and challenges for the proposed EE portfolio.

Diversity in Income and Economic Resources

At PG&E, we believe clean energy should be affordable for and accessible to customers of all economic backgrounds, but recognize that within PG&E's service territory, there are certain geographic areas in which customers may face greater burdens to affording essential utility services. An analysis in the CPUC's 2019 Annual Affordability Report finds that these geographic areas are "where utility services are currently least affordable for low-income households

(as measured by AR_{20})[25] *and* where residents are most vulnerable to future increases in essential service (as measured by SEVI)."[26] PG&E's EE portfolio provides broad opportunities to help customers reduce their energy use and save money by making essential services more affordable. Pursuant to D.21-05-031, PG&E's EE portfolio includes funding for equity segment programs that provide EE to hard-to-reach or underserved customers and disadvantaged communities (DAC) to advance the Commission's Environmental and Social Justice (ESJ) Action Plan draft 2.0.[27] See Exhibit 2, Chapter 3, Section E for the equity segment strategy. One example of an equity segment program is the new Residential Equity Placeholder program that targets low to moderate-income customers with certain EE and retrofit electrification solutions. See Exhibit 2, Chapter 4, D.1.

Diversity of Geography and Terrain

More than half of PG&E's service territory lies in the High Fire Threat Districts (HFTD) Tiers 2 and 3 as identified by the CPUC in 2018.[28] Approximately 10 percent of PG&E's electric customers[29] reside in HFTD areas. PG&E's EE portfolio can play a role to support energy resiliency particularly for customers in HFTD.[30]

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25 An abbreviation for the Affordability Ratio (AR) for household in the 20th percentile of the income distribution

26 *2019 Annual Affordability Report*, April 2021, CPUC, p. 10. For more information, *see* the following link: https://www.cpuc.ca.gov/-/media/cpuc-website/industries-and-topics/reports/2019-annual-affordability-report.pdf. Socioeconomic Vulnerability Index (SEVI): Describes the relative socioeconomic characteristics of communities – in terms of poverty, unemployment, educational attainment, linguistic isolation, and percent of income spent on housing – to quantify how the same utility cost may affect one community's ability to pay more than another's.

27 D.21-05-031, p. 81, OPs 2 and 4. See also ESJ Action Plan, Draft 2.0, available at: https://www.cpuc.ca.gov/esjactionplan/.

28 Available at: https://cpuc_firemap2.sig-gis.com/ (last accessed Feb. 9, 2022). Tier 2 consists of areas on the CPUC Fire Threat Map where there is an elevated risk for wildfires. Tier 3 consists of areas on the CPUC Fire Threat Map where there is an extreme risk for wildfires.

29 With a "customer" defined as an electric meter or service point, each of which generally represents at least one household or business.

30 "Energy resiliency" in this context refers to ensuring that homes, businesses, and facilities have reliable energy.

C. Principles of PG&E's EE Portfolio

This section details the underlying principles of PG&E's EE portfolio for the years covered in this strategic business plan from 2024-2031. PG&E's EE portfolio vision is built on three guiding principles: (1) We Deliver Excellent Customer Experiences; (2) We are Leaders in Environmental Stewardship; and (3) We are Here to Serve our Hometowns.

1. We Deliver Excellent Customer Experiences

PG&E is focused on providing excellent customer experiences to increase the overall participation and engagement in EE. PG&E will strive for a portfolio of EE offerings that:

- Are easy to participate in;
- Are integrated with other energy management programs; and
- Provide for a more personalized and digitized customer experience.

Through supporting its customers, PG&E hopes to build energy resiliency to climate change, reduce GHG emissions, lower customer utility costs and improve grid reliability. PG&E's EE portfolio includes plans to engage customers as energy saving partners and build long-term relationships to drive positive change.

2. We Are Leaders in Environmental Stewardship

PG&E embraces its role in achieving California's goal of carbon neutrality and to move to a climate-resilient economy. PG&E's EE portfolio can address climate change by both delivering solutions that help to decarbonize customer's homes and buildings and by supporting the use of clean and renewable energy resources powering our electric system.[31]

Through PG&E's EE portfolio of energy savings measures, PG&E can help reduce the overall carbon emissions of our customers' homes and businesses by permanently reducing their energy consumption. The energy savings that PG&E delivers to our customers removes:

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[31] For example, shortly after filing its EE application, PG&E intends to file a separately funded, but complementary, application for a GHG-optimized building decarbonization offering (similar to Southern California Edison's (SCE) Clean Energy Optimization Pilot (CEOP)).

- Carbon emissions through both avoiding the need to generate electricity through non-renewable means (such as natural gas fueled power plants); and
- The end-use combustion of natural gas in our customer homes and businesses.

PG&E's EE portfolio also leverages fuel-substitution energy savings measures where we can retire old, inefficient natural gas equipment. PG&E can provide our customers support for high-efficiency electric equipment in their place.

As PG&E's electricity supply moves towards 100 percent clean and renewable energy by 2045 to meet our Renewable Portfolio Standard goal, we understand that energy supply availability and cost are key considerations when developing and providing customer energy savings products, programs, and services through our EE portfolio. PG&E's EE portfolio is working closely with other PG&E demand and energy supply teams to ensure that we can offer a comprehensive Demand Side Management (DSM) approach to reducing customer demand and energy use and provide options to support a safe, reliable, affordable, and clean energy supply.

3. We Are Here to Serve Our Hometowns

PG&E's EE portfolio will help serve our hometowns by expanding customer access with more equity-based program offerings, supporting customer resiliency, and enabling the workforce of tomorrow through workforce, education, and training. PG&E also believes that EE can support affordability through a thoughtfully procured portfolio of programs that achieve cost-savings for all customers (not only program participants).

Part of serving our hometowns is making sure that everyone and everything is safe. Safety is embedded in everything we do. PG&E uses a comprehensive safety plan for ensuring the safety of our customers, contractors, and employees as we conduct energy efficiency program operations. Our processes include identifying risk level rankings (Low, Medium, High) based on pre-existing contractor safety standard criteria. We provide additional oversight and monitoring of our contractors out in the field by performing regular safety observations. In addition, PG&E is sensitive to

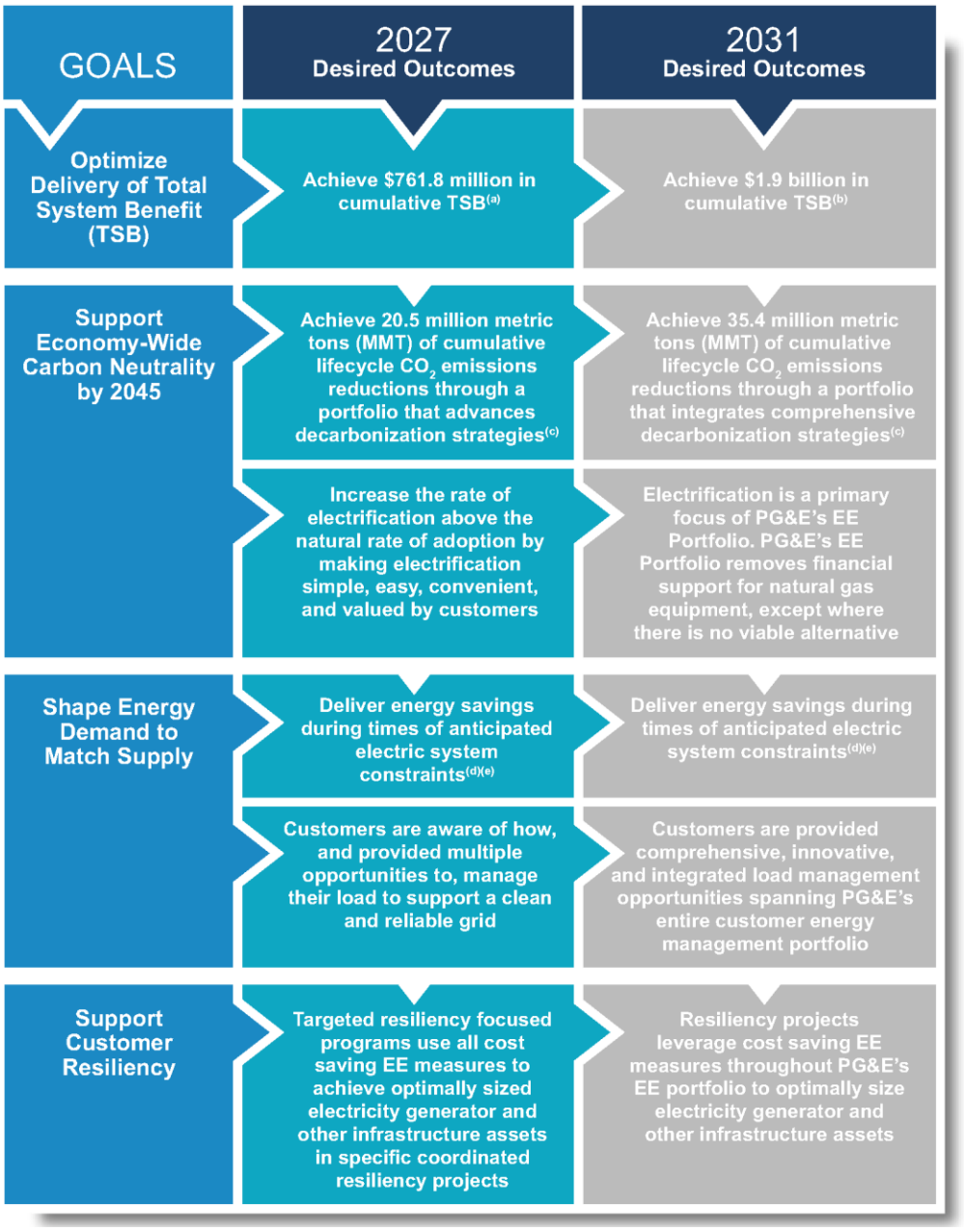
customers' needs during the COVID-19 pandemic and will continue to adjust its programs as needed to safely meet its customers' needs.

D. PG&E's EE Portfolio Goals and Desired Outcomes

PG&E's EE portfolio goals for 2024-2031 are as follows: (1) optimize delivery of TSB; (2) support California's goal of economy-wide carbon neutrality by 2045; (3) shape energy demand to match supply, and (4) support customer resiliency. The portfolio strategies and tactics in PG&E's EE portfolio application are designed to pursue these goals and promote these outcomes.

PG&E is pursuing these goals to achieve key milestone desired outcomes throughout this application period outlined in Figure 1-3 below. PG&E provides these aspirational targets by 2027 and by 2031.

FIGURE 1-3
PG&E EE PORTFOLIO DESIRED OUTCOMES



(a) PG&E's cumulative TSB goals for 2024-2027 adopted in D.21-09-037, p.19.

(b) PG&E's cumulative TSB goals for 2024-2031 adopted in D.21-09-037, p.19.

(c) Cumulative lifecycle CO2 emissions from PG&E's EE Application CET output forecast, converted from short tons to metric tons, including codes and standards.

(d) PG&E is defining this timeframe as the hours of 4pm to 9pm, every day to align with a frequently used peak pricing period of PG&E's electric rate plans. PG&E will measure progress towards this goal in watt-hours (Wh) as opposed to only DEER defined peak watts.

(e) PG&E is not including a target figure as the savings in watt-hours for only the specific time periods of concern is not yet an available CET output. PG&E-recommended improvements to CET outputs and overall EE benefit calculations are discussed in subsequent chapters throughout this application.

1. Portfolio Goal: Optimize Delivery of TSB

As the new adopted metric, one of PG&E's key considerations in optimizing for TSB focuses on delivering programs and services at multiple interaction points, and deploying a variety of program types, intervention[32] approaches, and transaction structures to increase customer participation. This increased participation will help PG&E deliver on its TSB portfolio metric by generating benefits from all customer sectors across our diverse service territory.

PG&E plans to measure progress towards achieving this portfolio goal by delivering at least the cumulative TSB goal by the end of each of our two portfolio cycles, by 2027 and by 2031, as required by D.21-09-037.[33] These cumulative figures are provided in Figure 1-3.

Additional details on PG&E's approach to portfolio optimization are included in Exhibit 2, Chapter 5 of this application.

2. Portfolio Goal: Support Economy-Wide Carbon Neutrality By 2045

PG&E is committed to helping California succeed in reaching its climate commitments of reducing GHG emissions by 40 percent below 1990 levels by 2030,[34] and ultimately reaching economy-wide carbon neutrality by 2045.[35] Based on recent reporting from the California Air Resources Board (CARB),[36] "California will require much deeper GHG emissions reductions to reach its [targets]"[37] and "by any measure, in any scenario, achieving

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32 PG&E uses the term "intervention" to broadly cover the various points at which our portfolio's funded activities influence a customer or other market actors' behavior or actions, and it is through this influence that we can generate value in the form of benefits for our customers.

33 D.21-09-037, p. 19.

34 See California SB 32 (2016).

35 See California Executive Order B-55-18 (2018).

36 *California Greenhouse Gas Emissions for 2000 to 2019: Trends of Emissions and Other Indicators*, CARB, July 28, 2021, available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/ca_ghg_inventory_trends_2000-2019.pdf

37 https://ww2.arb.ca.gov/news/latest-state-greenhouse-gas-inventory-shows-emissions-continue-drop-below-2020-target.

carbon neutrality by 2045 will require a wholesale transformation of California's energy economy."[38]

PG&E recognizes that meeting this challenge and supporting California's climate commitments requires an EE portfolio focused on innovative and integrated building decarbonization and electrification solutions.[39] To ensure that our EE portfolio is aligned with and contributing to California's decarbonization goals, PG&E sets a target of 35.4 million metric tons of cumulative lifecycle carbon dioxide (CO_2) emissions reductions[40] through our EE portfolio by 2031 (see Figure 1-3). GHG emissions reductions is a useful metric to track progress towards the state's carbon neutrality target by 2045 because it is a common unit of measurement for decarbonization. This GHG reduction target results from PG&E's embrace of building and end-use electrification, our commitment to helping ensure California has a capable and qualified workforce able to implement these carbon reduction investments, our continued leadership in building codes and appliance standards advocacy, and our support for local jurisdictions and the building community. PG&E's EE portfolio is also coordinating with other customer energy management portfolios and energy supply teams to deliver comprehensive, renewable energy optimized load management practices to further reduce GHG emissions from our customers' electricity use and to help meet the needs of a reliable and low-carbon energy system of the future. See Section D.3 regarding this coordination.

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38 *Achieving Carbon Neutrality in California: PATHWAYS Scenarios Developed for the California Air Resources Board,* E3, p. 9.

39 For example, as stated above shortly after filing its EE application, PG&E intends to file a separately funded, but complementary, application for a GHG-optimized building decarbonization offering (similar to SCE's CEOP).

40 PG&E selected this metric because it is available as an output from the CPUC's Cost-Effectiveness Tool (CET). The EE portfolio's contribution toward carbon neutrality may be understated because lifecycle CO_2 emissions reduction only captures the emissions reductions associated with interventions in PG&E's EE portfolio that deliver energy savings, while additional activities that support GHG emissions reductions, but do not directly deliver energy savings such as Workforce Education and Training (WE&T) programs are not captured through this metric. Additionally, GHG emissions reductions from low-GWP refrigerant measures are not captured in this metric. CO_2 equivalent may be a better metric however this is not available as a CET output.

Qualitatively, PG&E is proposing two related outcomes by the end of each the two four-year portfolio cycles. During the first portfolio cycle of 2024-2027, PG&E plans to increase the rate of electrification above the natural rate of adoption by making electrification simple, easy, convenient, and valued by customers. By the end of the second portfolio cycle in 2031, PG&E anticipates electrification will be a primary focus of its EE portfolio and plans to remove natural gas equipment financial support except where there are no viable alternatives.

3. Portfolio Goal: Shape Energy Demand to Match Supply

Achieving California's goal of renewable energy and zero-carbon resources supplying 100 percent of total electric retail sales in California by 2045 will require an increase in clean, but variable, renewable generation[41] and a reduction (or elimination) of fossil-based, but firm, fast-ramping generation.[42] The CEC Draft Staff Analysis of Potential Amendments to the Load Management Standards notes that "as renewable resources replace conventional fossil-fuel powered plants, the electric grid will place increasing value on resources that can balance supply and demand."[43] The 2021 SB 100 Joint Agency Report describes load flexibility as, "the ability to shift electricity use to other parts of the day," and describes load flexibility as "critical" to electric reliability and affordability, noting that it can also reduce GHG emissions by shifting electricity use to times when the grid relies on cleaner energy.[44] The need for resources that can balance supply and demand will likely be heightened further as PG&E looks ahead to retiring its 2,200 megawatt Diablo Canyon Power Plant in 2025.

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41 For example, solar photovoltaic generation only generates electricity when the sun is shining, and wind turbines only generate in correct wind conditions.

42 For example, natural gas power plants would be able to generate electricity whenever needed, regardless of external conditions.

43 Draft Staff Analysis of Potential Amendments to the Load Management Standards, p. 7. Available: https://www.energy.ca.gov/publications/2021/analysis-potential-amendments-load-management-standards.

44 Available here: https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity.

Broadly, shaping energy demand to match supply means delivering the right demand-side resources, in the right places, and at the right times, to keep the grid operating and delivering power to customers. In practice, this effort requires coordination of multiple DSM activities, including electric rate design, demand response (DR), distributed generation and energy storage, electric vehicle charging, and EE.

PG&E's EE portfolio can help shape energy demand to match supply by providing:

a) EE products and services that permanently reduce load during times of unavailable, high-cost, or non-renewable supply;
b) EE products that have flexible demand capabilities (products able to reduce, shift, or shape usage in response to customer or grid needs, or electric retail rates); and
c) Integrated demand side management (IDSM) programs able to deliver EE in combination with one or more DSM activities (other DSM activities are mentioned above).

PG&E plans to quantitatively measure progress on this goal by tracking the delivered energy savings during anticipated times of electric system constraint. See Figure 1-3 for more information.

Qualitatively, PG&E proposes two distinct but related outcomes by the end of each of the two portfolio cycles by 2027 and by 2031. During our first portfolio cycle of 2024-2027, PG&E intends to track customer awareness of, and access to opportunities to manage their energy use to support a clean and reliable electric grid. By the end of the second portfolio period, PG&E intends to leverage our entire DSM portfolio of customer programs, including our EE portfolio, to provide customers a comprehensive and integrated pathway to manage their energy use to support a clean and reliable electric grid.

4. Portfolio Goal: Support Customer Resiliency[45]

As stated above, more than half of PG&E's service territory lies in the HFTD, Tiers 2 and 3, as identified by the CPUC in 2018.[46] Customers in these HFTD areas may be more interested in ensuring customer resiliency, and PG&E's EE portfolio can play a role in supporting these efforts.

PG&E's EE portfolio is committed to supporting statewide GHG reduction and carbon neutrality efforts, and to slow and hopefully reverse the impacts of climate change. However, even with this focus on combating climate change, PG&E recognizes that in the near term for the safety of our customers and communities, PG&E may need to turn off power in certain communities during severe weather events to help prevent wildfires. These Public Safety Power Shutoffs (PSPS) are a necessary tool of last resort to help keep our customers safe from wildfires.

EE has long been placed first in the "loading order" of resources potentially available to meet energy needs.[47] Since EE products and services can both reduce customer load as well as provide customers the tools to manage their energy use on an ongoing basis, our EE portfolio can help reduce the amount of generation needed to power customer homes and businesses.

We plan to measure our progress in supporting customer resiliency through the breadth of customers and resiliency projects that can leverage

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45 We use the term customer resiliency to mean the ability for a customer or community to keep their homes and businesses powered through alternative sources during an outage event. These alternative power sources may be individual customer owned generation and energy storage assets, community solutions such as a microgrid using locally sited power generators which operate during outage events. It can also include a permanent alternative power solution such as a remote grid or fixed power solution.

46 Available at: https://cpuc_firemap2.sig-gis.com/ (last accessed Feb. 9, 2022). Tier 2 consists of areas on the CPUC Fire Threat Map where there is an elevated risk for wildfires. Tier 3 consists of areas on the CPUC Fire Threat Map where there is an extreme risk for wildfires.

47 First adopted in the California Energy Action Plan in 2003, and reaffirmed in State of California Energy Action Plan II, 2005. "As stated in EAP I and reiterated here, cost effective energy efficiency is the resource of first choice for meeting California's energy needs. Energy efficiency is the least cost, most reliable, and most environmentally-sensitive resource, and minimizes our contribution to climate change. California's energy efficiency programs are the most successful in the nation and we want to continue to build upon those successes." p. 3.

EE to generate overall cost savings for our customers. Additional details regarding the resiliency projects supported by our EE portfolio are discussed below in Section E.1. Our 2024-2027 portfolio offers resiliency support programs that intend to achieve cost savings for resiliency projects designed and implemented in coordination with EE. By the end of our 2031 portfolio, PG&E anticipates expanding this EE support across our portfolio and throughout our service territory so that an even broader scope of resiliency projects may optimally size their electricity generation and other infrastructure assets by first employing all cost saving EE measures.

E. PG&E's EE Strategies for 2024-2031

1. Portfolio Strategies

This section summarizes the key strategies for PG&E's EE portfolio for the eight-year strategic business plan period of 2024-2031: (1) deliver TSB by meeting customers where they are; (2) pursue a multi-pronged approach to building decarbonization; (3) deploy technologies that are grid-responsive and demand flexible; (4) contribute to cost-saving resiliency solutions for customers; and (5) properly value the benefits of EE. As these key strategies also form the basis for PG&E's 2024-2027 portfolio plan, PG&E includes more detail as referenced accordingly.

The following strategy prompts in italics requested by the CPUC in the Energy Division template are mapped to the above five PG&E strategies, as noted below in Table 1-1:

TABLE 1-1
STRATEGY PROMPT MAPPING

Line No.	Strategy Prompts from Energy Division Template	PG&E Portfolio Strategy That Addresses CPUC Prompt
1	*Strategy for application/use of various and new methods for savings forecasting and quantification methods (e.g., normalized metered energy consumption (NMEC) including requirements in Public Resources Code Section 25310(c)(5)).*	Strategy #3
2	*Strategies for market intervention and EE adoption: e.g., targeted points of intervention; delivery channels/platforms/methods.*	Strategies #1-4
3	*New strategies for spurring innovation: e.g., cultivating new, diverse, businesses to enter EE design/implementation, cultivating relationships with traditional actors in other markets to enter EE design/implementation, supporting the adoption of new and evolving GHG reducing technologies.*	Strategies #1-4
4	*Strategy for incorporating low global warming potential (GWP) refrigerants in the portfolio*	Strategy #2

a. Strategy #1: Deliver TSB By Meeting Customers Where They Are

Delivering programs and services structured to address customer concerns and potential barriers to participating in EE programs, and which are offered through multiple interventions[48] and interaction points, can meet customers' needs and increase participation. Increasing participation is one pathway to delivering on PG&E's EE portfolio metric of TSB by generating benefits from a wide range of customer sectors across our service territory. PG&E proposes three key tactics below to pursue this strategy: (1) offer a diverse EE portfolio; (2) design a portfolio that meets customers where they are; and (3) enhance digital strategies and personalize customer journeys.

1) Offer a Diverse EE Portfolio

PG&E will leverage its PA role to develop complementary interventions, programs, and strategies that provide customers opportunities to participate in EE that best suit their needs. PG&E's

[48] Interventions are actions taken by the program administrator to influence a customer's energy efficiency. This can be in the form of activities including but not limited to: financial incentives, technical assistance, efficiency C&S, and informational products. See Exhibit 2, Chapter 4 for details on interventions.

EE portfolio will employ diverse programs, services, transaction structures (such as financing and performance-based incentives), and intervention channels. Our commitment to offering a varied portfolio will allow PG&E to deliver timely solutions for customers related to: replacing aging infrastructure with new, high-efficiency solutions; helping customers upgrade their facilities without disrupting their operations; creating ongoing energy management partnerships to control operating costs; and offering attractive capital access structures allowing customers to make investments in EE without jeopardizing other needs. See Exhibit 2, Chapter 4, Sections D and E for more detail.

2) Design a Portfolio to Meet Customers Where They Are

PG&E's role as a PA is to design a portfolio of programs that meets the needs of its diverse population of customers. PG&E's customers' perceptions about EE and energy management are highly varied. See Exhibit 2, Chapter 4, Section A.3 for insights on PG&E's customer perceptions. PG&E identifies three areas to deliver on its portfolio strategy through customer-centric principles: (1) increasing awareness of EE and energy management opportunities; (2) providing motivation for customers to pursue EE; and (3) removing barriers that could impede customers' participation in EE.

As part of this, marketing is a critical element of the customer experience. This includes broad awareness and education as well as more program specific marketing. This dual approach engages customers through multiple channels, to drive EE program adoption and energy management behavior change. PG&E's marketing uses a combination of traditional and newer marketing channels to meet customers where they are. Through multi-touch and multi-channel campaigns, customers move through the program adoption journey including awareness, interest, evaluation, and conversion. PG&E intends to continue to use this marketing approach to drive participation in EE programs and deliver on our portfolio goals. See Exhibit 2, Chapter 4, Section A.4 for more detail.

3) Enhanced Digital Strategy and Personalized Customer Journeys

PG&E plans to expand online customer access to information and will connect customers to technical experts who can help them create EE and decarbonization action plans. PG&E's online EE solutions aim to provide personalized recommendations to customers for planning and implementing EE and decarbonization activities. These solutions can provide customers with information regarding their energy bills and energy use, rate plan options, energy management programs including EE and DR, and clean energy solutions for their homes, businesses, and transportation. PG&E anticipates that simplified, tailored customer experiences will lead to increased customer participation across our EE portfolio and other energy management programs. See Exhibit 2, Chapter 4 for more details.

b. Strategy #2: Pursue a Multi-Pronged Approach to Building Decarbonization

PG&E is committed to supporting building decarbonization while keeping energy affordable by managing an equitable and viable transition to zero-carbon energy alternatives for customers. Within EE programs, PG&E's support for building decarbonization reflects the different needs of customers and communities with programmatic approaches such as equipment incentive and financing programs, customer education, WE&T, and advocacy to improve appliance standards and building codes. PG&E provides its high-level vision for its building decarbonization strategies through EE below.

1) Support Electrification in Existing and New Buildings

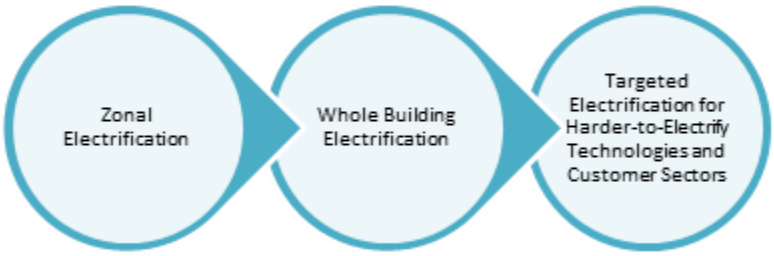
While PG&E's approach to building electrification differs for existing and new buildings, the desired outcome for both is for all-electric or electric-ready buildings.

a) Existing Building Electrification

Decarbonizing California's existing building stock must be done thoughtfully as it has the potential to exacerbate issues of

affordability and equity for remaining gas customers. As E3 highlights in its report *The Challenge of Retail Gas in California's Low-Carbon Future*, "unsustainable increases in gas rates and customer energy bills could be seen after 2030, negatively affecting customers who are least able to switch away from gas, including renters and low-income residents."[49] By leveraging zonal electrification or whole building electrification approaches—rather than single appliance incentives—PG&E can mitigate impacts to future gas system costs and gas rates to facilitate an equitable transition to a decarbonized future. Figure 1-4 below depicts this order of preference for existing building electrification. Brief explanations for each of those approaches is provided below.

FIGURE 1-4
PG&E'S PREFERRED ORDER FOR EXISTING BUILDING ELECTRIFICATION



1) Zonal electrification, also known as strategic de-commissioning of the natural gas system, prioritizes whole building electrification for entire regions. This approach is guided by PG&E's vision to preserve customer affordability while maximizing emission reductions. The approach uses PG&E data to identify zones with system

[49] Found at: https://www.energy.ca.gov/sites/default/files/2021-06/CEC-500-2019-055-F.pdf, p. iii.

conditions and natural gas asset characteristics—such as, but not limited to, age of assets, risks, number of customers, and system throughput—that can provide insight about locations that may warrant further engineering and/or costing review for zonal electrification. While zonal electrification is likely to have the best long-term outcome for our customers, it requires highly targeted enrollment and the complete electrification of all customers in a particular "zone" to enable natural gas asset decommissioning. As a result, while this might be the preferred approach, it may be difficult to achieve. PG&E proposes new zonal electrification placeholder programs to support a broader enterprise strategy and investment into zonal electrification. See Exhibit 2, Chapter 4, Section D.1 and D.2 for information on PG&E's new zonal electrification placeholder programs.

2) Whole-building electrification focuses on replacing all existing natural gas end uses within individual buildings or groups of buildings with high-efficiency electric alternatives. Whole-building electrification can help with long-term affordability for participating customers as it removes individual natural gas equipment and the associated PG&E natural gas system operations and maintenance costs. Additionally, whole-building electrification removes the need for PG&E to provide natural gas service to the individual electrified customer and therefore may make zonal electrification easier in the future since there would be fewer gas customers in an area to have to fully electrify.

3) Targeted electrification for harder-to-electrify technologies and customer sectors focuses on the pursuit of partial electrification of existing buildings when whole building electrification is not possible or feasible. Certain technologies such as cooking equipment may be harder-to-electrify due to barriers such as customer

preference, the higher cost of induction cooktops compared to gas cooktops,[50] and may require changes to cooking technique and kitchen layouts.[51] The CEC notes:

> "even though gas cooking is only the third-largest contributor to GHGs from homes, it contributes to the need to extend gas lines to new homes and the reason why some homeowners are reluctant to go all-electric."[52]

Similarly, in commercial buildings, cooking accounts for less than one-fourth of gas consumption in buildings.[53] As such, targeted efforts focusing on cooking electrification could have significant benefits (in the form of reduced gas system costs) beyond those realized by the participating customer. In instances when zonal or whole building electrification is not possible, it may be beneficial to focus efforts on electrifying appliances or other technologies where possible areas during times when implementation costs are lower, such as when customers are already planning on replacing equipment upon failure or as a part of all-electric new construction. However, as discussed in Section E.1.b.3, PG&E is limited in its ability to focus its funding for technology-based programs that can influence availability of viable electric alternatives to gas appliances and therefore intends to focus its funding on overcoming other barriers through WE&T and C&S for these technology areas.

PG&E includes several strategies and tactics to support existing building electrification across these three approaches

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50 *California Building Decarbonization Assessment – Final Commission Report*, CEC, August 13, 2021, p. 82.

51 *Ibid*, p. 87.

52 *Ibid*, p. 86.

53 *California Building Decarbonization Assessment – Final Commission Report*, CEC, August 13, 2021, pp. 30-31, Figure 7, citing California Commercial End Use Survey.

that are discussed in more detail in Exhibit 2, Chapters 1 and 4. These include:

- A new placeholder program for zonal electrification in the equity segment for which PG&E intends to leverage the CPUC's AR and SEVI/SEVI-DAC[54] metrics to target this program in geographic areas that include underserved and vulnerable communities;
- Statewide new construction programs that support existing building electrification by providing two pathways toward whole-building electrification for retrofits by requiring either the complete conversion to all-electric end uses and removal of gas meters, or pre-requisites to dwellings and buildings to be electric-ready if they are not yet able to fully remove gas end-uses; and
- Local and statewide WE&T programs to reduce the barriers customers face when considering fuel substitution for gas-to-electric appliances.

b) New Building Electrification

Newly constructed buildings can have the lowest decarbonization costs because there are no existing appliances or infrastructure to remove or replace and electrification can be a part of the design up front. PG&E's strategy to address new building electrification is centered around two key areas: (1) statewide new construction programs and (2) C&S programs.

PG&E is the lead program administrator for the statewide new construction programs for the residential and non-residential sectors. The statewide new construction programs include a pathway for builders and developers to pursue an all-electric option for newly constructed buildings that are designed without any gas end-uses, therefore eliminating

54 SEVI-DAC is Socioeconomic Vulnerability Index-Disadvantaged Communities.

the need for gas meters and natural gas service. See Exhibit 2, Chapter 4, Section E.3 for more detail.

2) Technical Support and Advocacy Through C&S

While building decarbonization and electrification are important tools in meeting California's climate goals, there are significant market barriers to achieving these policy initiatives through tangible changes in the built environment. Advocating for advancements in state, federal, and regional regulations can accelerate the transition to low-carbon buildings and the use of appliances that have the greatest decarbonization potential. PG&E has long been a leader in building codes and appliance standards advocacy and providing technical support to local jurisdictions and state agencies in EE. PG&E expanded its C&S support to other areas including decarbonization and water efficiency.

PG&E is the lead program administrator for the statewide C&S programs. See Exhibit 2, Chapter 4, Section E.1, for PG&E's C&S strategies that support building decarbonization. This includes coordination with new construction programs for enhanced data collection to support future building codes and appliance standards, a new local program focused on participating in building code and appliances standard decarbonization rulemakings, supporting local governments' local energy ordinances (also known as reach codes) through technical support, and code readiness and compliance improvement programs that can support the building industry in its building decarbonization efforts.

3) Decarbonize through Equipment Support

PG&E's EE portfolio provides financial assistance in the form of incentives and financing to encourage the adoption of energy efficient end-use appliances. With the increased focus on building decarbonization and the need for a managed transition from gas to electric systems, there should be increased focus on the end-uses through which those energy savings are delivered and a focus on overall GHG reductions rather than energy savings alone.

Limit Natural Gas Equipment Support

It is important to support a building decarbonization transition that is rooted in equity and affordability for customers. PG&E recognizes the unique needs of certain customers, such as those in the industrial and agricultural sectors, that rely on natural gas to power core business practices and therefore may be unable to electrify their buildings or equipment. In these situations, PG&E can work closely with those customers to deliver opportunities to reduce their energy use and carbon footprint without disruptions to their core operations. For other customer sectors, by the end of the eight-year business plan period, PG&E anticipates limiting its financial support for long-life gas equipment except where there is no viable alternative.[55]

Incorporate Low-GWP Refrigerants.

Pursuant to the Energy Division template, PG&E provides this information regarding incorporating low-GWP refrigerants. PG&E recognizes the impact refrigerants from space and water heating equipment have on emissions in the building sector[56] and the need to address those emissions in the pursuit of carbon neutrality. PG&E uses the Commission's Refrigerant Avoided Cost Calculator

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55 In instances where PG&E has limited ability to impact funding decisions on equipment support, such as for statewide programs for which PG&E is not the lead program administrator, funding may continue for long-life gas equipment in PG&E's territory. D.18-05-041 (pp. 185-186, OP 18) directed that the lead program administrator for each statewide program shall have sole responsibility for the program. PG&E is not the lead for any technology-based statewide programs.

56 From CARB (https://ww2.arb.ca.gov/resources/documents/high-gwp-refrigerants.):

"Global Warming Potential, or GWP, is a measure of how destructive a climate pollutant is. Refrigerants today are often thousands of times more polluting than carbon dioxide (CO_2). The GWP of a gas refers to the total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, CO_2, which is assigned a value of 1. GWPs can also be used to define the impact GHG gases will have on global warming over different time periods or time horizons. These are usually 20 years, 100 years, and 500 years. A time horizon of 100 years is used by regulators (e.g., the California Air Resources Board)."

to guide its use of low-GWP refrigerant measures in the portfolio forecasts of this application.[57]

PG&E can address barriers to adoption of low-GWP refrigerant measures through WE&T. PG&E also intends to support the adoption of low-GWP appliances into California's building code, as well as in regulations to be adopted by the Environmental Protection Agency, CARB, and other California state agencies as appropriate.

Further details on PG&E's strategies to incorporate low-GWP refrigerants into its EE portfolio can be found in Exhibit 2, Chapter 1, Section C.2.

c. Strategy #3: Deploy Technologies That Are Grid-Responsive and Demand Flexible

As PG&E looks forward to a grid powered by variable, renewable generation that may be operated by PG&E, another non-utility load serving entity, or even other customers through Distributed Energy Resources (DER),[58] we recognize that our EE portfolio must provide solutions to match these evolving grid characteristics to continue to provide our customers with safe, reliable, affordable, and clean energy. PG&E offers the following tactics to operationalize this strategy.

1) Align the EE Portfolio With PG&E's Enterprise-Wide Coordinated Supply and Load Strategy

PG&E recognizes that our electric system needs the right resources, in the right places, at the right times to adapt to changing grid conditions. These needs include more flexible resources to accommodate greater amounts of renewable generation, more distributed resources at appropriate locations on the electric grid, and a cost-effective pathway to implementing these changes. PG&E's customers need to be a part of this solution, with clear

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57 D.21-05-031, OP 16.

58 DERs can be defined as:

> "…distribution-connected distributed generation resources such as energy efficiency, demand response, customer generation (e.g., rooftop solar), energy storage, alternative fuel vehicles (e.g., electric vehicles), and water-energy conservation."

Source: https://www.cpuc.ca.gov/demand_side/.

pathways to engage in the full spectrum of load management programs and electric rate products that allow them to utilize the full potential of their DERs.[59]

PG&E is working to implement an enterprise-wide coordinated supply and load strategy to accomplish these needs, and intends to position our EE portfolio to play a key role in delivering both:

a) A cohesive, accessible, and clear customer experience; and
b) A comprehensive, innovative, customer energy management portfolio strategy.

2) Utilize the Meter-Based Platform Throughout our Portfolio

Pursuant to the Energy Division template, PG&E provides information on its strategies to use savings forecasting and quantification methods such as NMEC where cost-effective and feasible. PG&E refers to approaches to calculating savings and TSB using metered customer energy usage data (meter data) as the meter-based platform. The meter-based platform comprises three primary approaches: NMEC, strategic energy management, and experimental or quasi-experimental methods.

Meter-based approaches can play a key role in PG&E's EE portfolio in several ways. First, they can enable more granular measurement and targeting of EE savings. They can accomplish this by measuring the impact of programs on the customers participating (rather than relying on average values), and by providing regular feedback to implementers and customers about program impacts. Feedback can both support load flexibility and help to identify if an intervention is not working. Second, meter-based approaches can enable projects that are more challenging, or not possible, to pursue through approaches that rely on engineering calculations. Meter-based approaches measure

[59] By full potential, PG&E means utilizing DERs to reduce, shift, or shape usage in response to customer or grid needs or electric retail rates.

savings from the existing conditions[60] of a customer's building, and therefore enable programs to target "stranded potential"[61] and capture the impact of behavioral, operational, and retrocommissioning interventions. Meter-based approaches also capture the impact at the meter of whole-building or whole-system interventions, and in doing so can support deeper-savings projects. Finally, as meter-based approaches continue to evolve, they may facilitate integration with other DERs (e.g., DR and energy storage) by measuring the overall impact from all demand-side interventions on energy usage from the grid. PG&E envisions continuing to expand the use of meter-based approaches where these measurement methods are cost-effective and feasible to measure, pay for, and claim EE savings.

d. Strategy #4: Contribute to Cost Saving Resiliency Solutions for Customers

PG&E intends to leverage our EE portfolio to support solutions that increase customer resiliency. Load reductions achieved when implementing EE interventions may be able to deliver cost savings to individual participants and all customers when incorporated into the scope of a resiliency solution project. PG&E offers two tactics to operationalize this strategy.

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60 Information on EE baselines including existing conditions and code baselines can be found here: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/energy-efficiency/energy-efficiency-baselines.

61 The *Energy Efficiency Potential and Goals Study for 2018 and Beyond* defines stranded potential as:

> "the opportunities for energy efficiency that are not currently captured by either PA rebate programs or codes and standards. Stranded Potential is below code savings that is not materializing in the market because there is no incentive for the customer to upgrade their existing equipment given current program rebate policy. Under AB802, PAs could start offering rebates for bringing existing equipment up to code thus motivating a whole new subset of customers to install energy efficiency and capturing the Stranded Potential."

Navigant, *Energy Efficiency Potential and Goals Study for 2018 and Beyond*, p.4, Aug. 23, 2017. (https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M194/K614/194614840.PDF , last accessed Feb. 9, 2022).

1) Use EE to Reduce Customer Costs for Resiliency Solutions

PG&E's Wildfire Mitigation Plan (WMP)[62] plans for the construction and operation of microgrids and remote grids as alternative ways to provide electricity to our customers either during outage events (in the case of microgrids) or else as a permanent localized electric system (in the case of remote grids). Exhibit 2, Chapter 4, Sections D.1 and D.3 include PG&E's EE proposals to partner with microgrids and remote grid construction and operation programs to provide participating customers with permanent load reducing solutions to reduce energy generation demand and these microgrid and remote grid costs.

2) Use EE to Support Individual Customer Resiliency Solutions

PG&E also plans to use its EE portfolio to support individual customer's resiliency solutions through programs that provide permanent load reduction or technical assistance for identification of resiliency opportunities.

PG&E understands that our customers are increasingly interested in installing electricity generation and backup electricity storage to prevent losing power during power outage events. Both the initial construction and ongoing operating costs are highly dependent on individual energy needs. Therefore, PG&E intends to position its EE portfolio to provide permanent load reducing solutions that may reduce these resiliency project costs.[63]

e. Strategy #5: Properly Value the Benefits of EE

The goals and strategies outlined above and detailed across PG&E's testimony offer additional customer benefits that extend beyond

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62 PG&E 2021 WMP is available at: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/2021-Wildfire-Safety-Plan.pdf. PG&E expects to file its 2022 WMP on February 25, 2022 which will include information in microgrids and remote grids. Note: this is not a direct link, one has to do a search.

63 Department of Energy Factsheet discusses cost savings and passive survivability benefits of EE: https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/DOE%20BB%20Resilience.pdf.

those that are currently measured and reported in EE. PG&E understands that to better focus on the people we serve, the planet we inhabit, and California's prosperity, we must demonstrate the benefits our EE portfolio expects to provide to our customers in return for their investments in it. While PG&E plans to demonstrate the benefits we will deliver according to the current set of EE metrics during the 2024-2027 portfolio plan years, updating the TSB calculation to include certain additional energy system benefits may encourage PAs to more directly incorporate these types of activities in the second four-year portfolio cycle from 2028-2031.

The three additional benefit areas are:

1) localized distribution system benefits;
2) resiliency support benefits; and
3) retrofit building electrification benefits.

These benefit areas and PG&E's proposed next steps toward quantifying the value of these benefits and including them in the TSB calculation are discussed in more detail in Chapter 3.

2. Portfolio Management Strategies

a. Segmentation Strategy Summary

D.21-05-031 requires that all PAs assign each EE program ID to one of three segments—RA, MS, or equity—based on the program's primary purpose.[64] C&S remains a separate segment.

PG&E's position is that a program is in the RA segment unless its primary purpose aligns with MS or equity objectives, rather than with RA objectives. As recognized in D.21-05-031,[65] while an individual program may only be assigned to one segment at any point in time, it is often the case that programs have multiple objectives.

The forecasted cost-effectiveness of a program was not a determinant in the segment assignments, however D.21-05-031

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64 D.21-05-031, OP 2. The Decision also confirmed (p.16) that C&S is separate: "C&S programs will remain separate as well, as previously defined in D.12-05-015." EM&V funds are assigned to an EM&V segment for reporting purposes in California Energy Data and Reporting System.

65 D.21-05-031, pp. 15-16.

acknowledges "the conflict between cost-effectiveness and other equally or more important policy objectives such as equity and support for the energy efficiency market".[66] Portfolio segmentation enables PG&E and other IOUs to still support equity and MS activities valued by the Commission and include programs that may have otherwise been retired from the portfolio or not considered in a solicitation. See Exhibit 2, Chapter 3 for more detail on PG&E's segmentation strategy.

b. Sector Strategy

PG&E plans to serve customers across the following sectors: Residential, Commercial, Public, Agricultural, and Industrial. PG&E also includes six cross-cutting sectors in its EE portfolio: C&S, Emerging Technologies, New Construction, Local Government Partnerships, WE&T, and Finance. These sectors are discussed in Exhibit 2, Chapter 4, Sections D and E.

PG&E identifies the following seven intervention strategies and cross-cutting efforts designed to achieve our portfolio goals. While the details vary by sector, and not all are used in each customer sector, these intervention strategies represent the core of the activities across the customer and cross-cutting sectors. The categories of intervention strategies below are intended to guide, but not limit, our efforts over the next several years:

- make participation in EE easier;
- provide access to capital;
- provide education and training to raise awareness; broaden engagement with EE and participants' interaction with other energy management solutions;
- accelerate adoption of advanced technologies that contribute to building decarbonization and enable flexible demand;
- offer targeted programs that support policy priorities, such as electrification and decarbonization, resiliency, and reliability;
- provide behavioral and operational interventions; and
- expand access to programs to underserved communities.

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66 D.21-05-031, pp. 13-14.

c. Budget Distribution Strategy

PG&E distributed its forecasted budget to achieve the broader EE portfolio goals described in Section D. In addition, PG&E distributed its budget to optimize for other factors including cost-effective goals for the RA segment.

PG&E's portfolio budget distributions are built upon the budget distributions from PG&E's recent third-party program solicitations from 2018-2021. For statewide programs led by other PAs, PG&E provides funding to the lead program administrators[67] based on the current proportional share contribution percentage[68] as required by D.18-05-041.[69] PG&E has not exercised its option to adjust its proportional share within 20 percent;[70] therefore, budget distributions are based upon the proportional share contribution percentages as filed in its *2022-2023 Energy Efficiency Biennial Budget Annual Advice Letter.*[71]

PG&E also distributed budget across its portfolio to reflect the move to portfolio segmentation as directed in D.21-05-031[72] and forecasts to maintain budget levels for MS and equity segments within 30 percent of its portfolio budget on a cumulative basis across each four-year portfolio cycle.

Further detail on PG&E's forecast methodology can be found in Exhibit 2, Chapter 2.

d. Outsourcing

1) Strategy to Maintain Outsourcing Target

Since 2018, PG&E has conducted third-party solicitations for local programs and for statewide programs for which it was the

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67 As assigned in Table 3 (pp. 91-92) and Table 4 (p. 92) in D.18-05-041.

68 See Exhibit 2, Chapter 2, Section B.2.

69 D.18-05-041, OP 22, pp. 186-187.

70 D.18-05-041, COL 18, p. 173 requires IOUs to fund statewide programs at levels within 20 percent of their proportional share based on load.

71 PG&E Advice Letter (AL) 4521-G-A/6385-E-A, (January 7, 2022). This advice letter is pending Commission disposition.

72 D.21-05-031, OP 9, p. 75.

assigned lead program administrator.[73] PG&E's local multi-sector solicitation was designed to provide flexibility for bidders to propose innovative program designs targeting any customer sector or combination of sectors, and spanned the entire customer portfolio in a single, coordinated solicitation effort. PG&E will continue to build and iterate upon this portfolio of programs throughout the strategic business plan years of 2024-2031 to deliver on its broader portfolio objectives.

As directed in D.16-08-019 and re-affirmed in D.18-01-004 and D.18-05-041,[74] PG&E forecasts that at least 60 percent of its total portfolio budget will be allocated to programs that meet the updated third-party definition[75] for each year of the eight-year strategic business plan period of 2024-2031. See Exhibit 2, Chapter 5 Section E for more detail on PG&E's strategies to maintain the outsourcing target.

PG&E recognizes the future procurement landscape will be different and focused on incremental adjustments to the portfolio rather than wholesale changes, building upon the foundation of new programs recently awarded. PG&E's EE procurement will focus on maintaining outsourcing levels above the minimum 60 percent budget requirement, while actively managing the performance of the EE programs to determine when it may be appropriate to replace or amend existing programs.

2) Solicitation Strategies

Based on its experience and feedback received from its peer resource group and independent evaluators, PG&E plans to adapt its solicitation approach in two key areas: (1) drive improvements to the procurement process, and (2) expand coordination of EE

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73 D.18-05-041, pp. 182-183; OP 26,p. 188 and Table 3, pp. 91-92.

74 *Id.*

75 D.16-08-019, OP 10, p. 111. Third-party definition:

> "To be designated as 'third party,' the program must be proposed, designed, implemented, and delivered by non-utility personnel under contract to a utility portfolio administrator."

portfolio activities with DER procurements. See Exhibit 2, Chapter 5 Section E.2.

e. Portfolio Coordination

As the EE landscape has grown in California, the number of entities with whom PG&E must coordinate has also grown.

Statewide Programs

PG&E is an active participant coordinating with the other IOUs for statewide programs. IOU program administrator coordination has evolved through the new statewide program model adopted in D.16-08-019 in which one lead program administrator administers a statewide program on behalf of the other IOUs.[76] PG&E supports continued coordination among the IOUs as part of its strategic business plan period and looks to identify areas of improvement. See Exhibit 2, Chapter 5, Section F.1 for more detail.

Coordination with non-IOU PAs

The non-IOU PAs include: (1) RENs and (2) CCAs. As of January 14, 2022, the approved non-IOU PAs in PG&E's service territory and included in this application are: the BayREN, CleanPowerSF, Marin Clean Energy, SJCE, and the 3C-REN. Other parties have submitted proposals to administer EE portfolios but have not yet been approved.

Coordination with CCAs and RENs Pending Approval by the CPUC

PG&E does not include forecasts for entities that recently submitted proposals[77] requesting approval to become PAs. Therefore, funding for these potential portfolios is not included in PG&E's eight-year authorized budget cap request. PG&E requests that funding for PA portfolios not approved by January 14, 2022 be considered incremental to PG&E's eight-year authorized budget cap request. See Chapter 3 for PG&E's policy requests.

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76 D.16-08-019, pp. 61-62.

77 East Bay Clean Energy Advice No.28-E, (October 21, 2021); Peninsula Clean Energy (PCE) AL PCE 20-E, (November 19, 2021); and Sonoma Clean Power (SCP) AL SCP 016-E, (December 1, 2021).

Coordination with Other DSM Programs

PG&E understands that strong coordination with other DSM programs and portfolios is key to meeting its portfolio goals and delivering on CPUC performance metrics. PG&E will coordinate through both program implementation and through the solicitation process employed in its procurement of new programs.

For program implementation, PG&E plans to leverage DSM coordination to meet our portfolio goal of shaping energy demand to match supply. Other portfolios such as DR, rate products, distributed generation and energy storage, and electric vehicle charging could be leveraged to offer customers comprehensive and IDSM options for managing and reducing their energy use. Similarly, PG&E's EE portfolio will coordinate with programs offered through our income-qualified portfolio such as the Energy Savings Assistance program to ensure equity in access and affordability for eligible customers. Additional details regarding specific customer sector and program coordination are available in Exhibit 2, Chapter 4.

Beyond coordinating program implementation, PG&E is proposing key improvements to our solicitation approaches to enable the EE portfolio to expand its procurement scope and service. See Exhibit 2, Chapter 5, Section E.

3. Evaluation, Measurement and Verification

From 2024 to 2031, PG&E will use EM&V as a tool to understand the performance of its EE portfolio and help to continuously improve it. PG&E's primary goals for its EM&V activities are to: (1) support the accuracy of ex ante claims, (2) inform portfolio design and management, and (3) collaborate with the Commission to support accurate and actionable ex post impact evaluations. See Exhibit 2, Chapter 6 for more detail.

4. Alignment of Business Plan Strategies and Outcomes With Legislative and CPUC Requirements

PG&E has aligned its 2024-2031 strategic business plan with legislative and CPUC requirements as shown in Table 1-2 below. PG&E discusses

alignment with both high-level portfolio strategies and more specific strategies.

TABLE 1-2
ALIGNMENT OF CPUC DECISIONS AND LEGISLATIVE REQUIREMENTS GUIDING PG&E'S STRATEGIC BUSINESS PLAN

Line No.	Area	Points of Alignment
1	Application Structure	Application aligns with application requirements in **D.21-05-031**
2	High-Level Strategies	Development of PG&E's forecast is guided by the EE goals approved in **D.21-09-037**. The shift to TSB goals, portfolio segmentation, and a new portfolio process in **D.21-05-031** guides PG&E's overall approach. **SB 100 (2018)**, **Executive Order B-55-18**, and **SB 350 (2015)** carbon neutrality and GHG reduction goals inform the portfolio's focus on decarbonization. PG&E's high-level approach is also guided by goals of California Long-Term EE Strategic Plan,[(a)] including: • Continually strengthening and expanding efficiency requirements in building codes and appliance standards; improving code compliance and enforcement; • Whole building and deep savings approaches; • IDSM approaches; • Building demand for EE in the industrial and agricultural sectors; and • Building workforce capacity.
3	Specific Strategies	Statewide programs align with **D.18-05-041** and **D.16-08-019**. Third-party outsourcing aligns with **D.18-01-004** and **D.16-08-019**. WE&T programs align with applicable requirements in **D.18-10-008**. Fuel substitution strategies informed by guidance in **D.19-08-009**. Use of meter-based approaches informed by recognition of NMEC approach in and requirements of **D.16-08-019 and Assembly Bill 802 (2015)**. Measures to promote low-global-warming potential refrigerants align with SB 1013 (2018) and D.21-05-031**.**

(a) Engage 360. *California Energy Efficiency Strategic Plan*, January 2011 Update. Last accessed January 10, 2022 at: https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/c/5303-caenergyefficiencystrategicplan-jan2011.pdf.

a. Portfolio Design and Budget Alignment With Relevant Action Plans Beyond the EE Proceeding

PG&E has aligned its 2024-2031 strategic business plan with the relevant action plans as shown in Table 1-3 below.

TABLE 1-3
ALIGNMENT OF PG&E'S STRATEGIC BUSINESS PLAN WITH RELEVANT REGULATORY ACTION PLANS BEYOND THE EE PROCEEDING

Line No.	Action Plan	Area of alignment
1	CPUC Draft DER Action Plan, version 2.0[(a)]	PG&E discusses how EE can integrate with and support other customer programs and PG&E and Commission objectives, in line with the focus in this action plan's DER customer programs track on improving coordination and planning across proceedings. PG&E's goals of using EE to shape energy demand to match supply, supporting customer resiliency, and optimizing delivery of TSB align with the DER action plan's goal of enabling all customers "to effectively manage their energy usage" while ensuring equity, aligning with evolution in rate design, load flexibility, distribution planning objectives, and integrated resource planning objectives.
2	CPUC Environmental & Social Justice Action Plan Draft 2.0[(c)]	PG&E's plans to serve the equity segment, and integrate equity considerations in other programs, to align with this action plan's goals of consistent integration of equity and access considerations throughout CPUC regulatory activities and increased investment in clean energy resources to benefit ESJ communities. PG&E's WE&T programs will promote "high road" career paths (i.e., strategies focused on economic growth, economic equity, shared prosperity, and a clean environment) as discussed in the action plan.
3	CEC 2019 EE Action Plan[(d)]	This plan, which offers a comprehensive roadmap for achieving California's EE and building decarbonization goals, informs PG&E's approach in multiple ways. For example: PG&E's goal of supporting economy-wide carbon neutrality by 2045 aligns with this action plan's recommendation that programs, research, and policies to work toward "robust, sustainable efficiency marketplaces" with goals of doubling EE savings, reducing barriers to EE, and reducing GHG emissions levels from buildings by 2030. PG&E's goal of optimizing delivery of TSB aligns with this action plan's recommendation to work toward reducing barriers to EE. PG&E's goals of shaping energy demand to match supply and supporting customer resiliency align with this action plan's recommendation to work toward IDSM.

(a) CPUC, *Distributed Energy Resources Action Plan: Aligning Vision and Action*, version 2.0, Draft, July 23, 2021. Last accessed January 10, 2022 at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/distributed-energy-resources-action-plan/draft-der-action-plan-20-public.pdf

(b) Draft DER Action Plan 2.0, p. 18

(c) CPUC, *Environmental & Social Justice Action Plan*, Draft 2.0, October 26, 2021. Last accessed January 10, 2022 at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/news-office/key-issues/esj/draft-cpuc-esj-2010262021c.pdf

(d) CEC, *2019 California Energy Efficiency Action Plan, Final Staff Report*, November 2019, CEC-400-2019-010-SF. Last accessed January 10, 2022 at: https://www.energy.ca.gov/filebrowser/download/1900

PACIFIC GAS AND ELECTRIC COMPANY

CHAPTER 2

ANNUAL PORTFOLIO BUDGETS FOR 2024-2031

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ANNUAL PORTFOLIO BUDGETS FOR 2024-2031

A. Introduction

1. Scope and Purpose

This chapter provides the annual projected portfolio forecast budgets that sum to the eight-year budget cap request. This chapter also includes savings, cost-effectiveness, and Total System Benefit (TSB) forecasts.

In Chapter 1, PG&E describes its portfolio vision, goals, and strategies that support the eight-year budget cap request. Figure 1-3 in Chapter 1 highlights PG&E's desired outcomes for its Energy Efficiency (EE) portfolio.

2. Summary of Request

PG&E requests that the Commission approve its eight-year budget cap request for 2024-2031 of approximately $2.8 billion, which includes two four-year portfolio cycles (2024-2027 and 2028-2031). The budget cap includes approximately $566 million requested on behalf of Regional Energy Networks (RENs) and Community Choice Aggregators (CCAs) approved for Portfolio Administrator (PA) status within PG&E's territory.[1] The first four-year portfolio cycle covers 2024-2027 and includes a revenue requirement of approximately $1.4 billion inclusive of approximately $272.7 million requested on behalf of RENs and CCAs approved for PA status within PG&E's territory.[2]

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1 This request reflects the budget needs of RENs and CCAs approved for PA status as of January 14, 2022 for program years 2024-2031. This includes Bay Area Regional Energy Network (BayREN), Tri-County Regional Energy Network (3C-REN), CleanPowerSF, Marin Clean Energy (MCE), and San Jose Clean Energy (SJCE). Should REN or CCA filing budgets differ from what is provided, or should REN or CCA PA statuses change, PG&E's authorized budget cap request will need to be amended. PG&E can work with Commission staff to determine the correct regulatory process by which PG&E can amend this request. PG&E proposes methods for adjusting its budget cap to account for changes in REN and/or CCA PA status in Chapter 3.

2 *Ibid.*

TABLE 2-1
2024-2031 BUDGET CAP REQUEST

Line No.		2024	2025	2026	2027	2028	2029	2030	2031	Total
1	PG&E EE Portfolio	$272,067,674	$274,280,720	$273,707,915	$275,099,169	$276,847,755	$279,540,628	$283,136,819	$287,613,431	$2,222,294,111
2	BayREN Request	38,101,638	40,336,985	41,278,573	42,059,441	42,900,629	43,758,642	44,633,815	45,526,491	338,596,214
3	MCE Request	19,273,639	19,522,249	19,584,021	19,837,407	19,905,308	19,976,604	20,051,465	20,130,069	158,280,762
4	3C-REN Request[(a)]	7,244,336	7,627,211	8,002,482	8,296,593	8,586,973	8,887,518	9,198,581	9,520,531	67,364,224
5	San Jose Clean Power Request[(b)]	–	–	–	–	–	–	–	–	–
6	CleanPowerSF Request	1,571,732	–	–	–	–	–	–	–	1,571,732
7	Total Authorized Budget Cap Request	$338,259,019	$341,767,165	$342,572,991	$345,292,609	$348,240,666	$352,163,392	$357,020,679	$362,790,521	$2,788,107,043

(a) PG&E's portion of 3C-REN's budget is 45.6 percent.

(b) PG&E transferred SJCE's 3-year 2022-2024 authorized budget to SJCE in one lump sum in October 2021, using PG&E's 2021 funds.

3. Support for the Request

PG&E's eight-year budget cap request supports its forecast to achieve cumulative TSB of approximately $2.1 billion and a Total Resource Cost (TRC) ratio for its resource acquisition segment of 1.16. See Table 2-2 and Table 2-4. Although first year net savings are no longer an energy efficiency goal metric,[3] forecasted first year net energy savings are still tracked[4] and provided below pursuant to the Energy Division EE Business Plan and Application template.[5] See Table 2-5 and Table 2-6.

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[3] Decision (D.) 21-05-031 replaced the first year net energy savings goal metrics with Total System Benefit.

[4] D.21-05-031, Col 2, p. 74.

[5] *EE Business Plan and Application Template – Final from ED with EMV*, received via Energy Efficiency Proceeding Service List R.13-11-005 on October 20, 2021.

TABLE 2-2
TRC COST-EFFECTIVENESS FORECAST FOR 2024-2031

Line No.	TRC by Segment	2024	2025	2026	2027	2028	2029	2030	2031	Cumulative
1	Resource Acquisition	0.97	1.00	1.08	1.12	1.19	1.24	1.30	1.38	1.16
2	Market Support	0.61	0.65	0.65	0.69	0.72	0.76	0.80	0.85	0.72
3	Equity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Evaluation Measurement & Verification	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	*Portfolio w/out C&S*	*0.77*	*0.79*	*0.84*	*0.88*	*0.93*	*0.97*	*1.01*	*1.07*	*0.91*
6	Codes and Standards	1.56	1.51	1.48	1.46	1.53	1.59	1.66	1.75	1.55
7	**Portfolio w/ C&S**	**1.29**	**1.26**	**1.25**	**1.25**	**1.28**	**1.31**	**1.35**	**1.41**	**1.30**

TABLE 2-3
PAC COST-EFFECTIVENESS FORECAST FOR 2024-2031

Line No.	TRC by Segment	2024	2025	2026	2027	2028	2029	2030	2031	Cumulative
1	Resource Acquisition	1.15	1.19	1.28	1.34	1.41	1.47	1.54	1.64	1.38
2	Market Support	1.08	1.15	1.12	1.16	1.28	1.42	1.59	1.80	1.33
3	Equity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Evaluation Measurement & Verification	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	*Portfolio w/out C&S*	*1.01*	*1.05*	*1.10*	*1.14*	*1.22*	*1.30*	*1.38*	*1.49*	*1.21*
6	Codes and Standards	26.22	24.16	22.36	21.82	19.04	17.22	17.06	16.96	20.60
7	**Portfolio w/ C&S**	**4.32**	**4.12**	**3.99**	**3.87**	**3.57**	**3.39**	**3.43**	**3.49**	**3.77**

TABLE 2-4
TOTAL SYSTEM BENEFIT FOR 2024-2031

Line No.	TRC by Segment	2024	2025	2026	2027	2028	2029	2030	2031	Cumulative
1	Total System Benefit	$218,132,682	$228,194,451	$236,664,773	$249,031,099	$266,401,266	$284,495,617	$305,723,178	$333,640,871	$2,122,283,937

TABLE 2-5
SAVINGS FORECAST INCLUDING CODES AND STANDARDS 2024-2031

Line No.	Energy Savings with Codes and Standards	2024	2025	2026	2027	2028	2029	2030	2031	Cumulative
1	First Year Net kW	309,190	292,475	278,159	261,881	232,519	213,743	206,881	200,240	1,995,088
2	First Year Net kWh	1,642,847,205	1,515,142,554	1,423,521,887	1,326,068,114	1,198,753,032	1,068,800,247	1,018,430,760	1,013,600,214	10,207,164,013
3	First Year Net Therms	44,660,626	44,181,643	40,161,573	36,334,216	33,517,778	32,818,954	33,254,643	32,614,647	297,544,081
4	Lifecycle Net kWh	19,976,939,374	18,047,484,267	16,879,760,722	15,823,025,659	13,881,525,781	11,895,351,903	11,097,837,642	10,978,934,170	118,580,859,518
5	Lifecycle Net Therms	507,044,770	501,029,262	450,119,217	409,145,830	358,254,986	342,959,970	346,680,937	332,134,992	3,247,369,963
6	Lifecycle CO2 (metric tons)	5,604,954	5,330,982	4,942,884	4,618,361	5,604,954	5,330,982	4,942,884	4,618,361	40,994,364

TABLE 2-6
SAVINGS FORECAST EXCLUDING CODES AND STANDARDS 2024-2031

Line No.	Energy Savings with Codes and Standards	2024	2025	2026	2027	2028	2029	2030	2031	Cumulative
1	First Year Net kW	73,404	72,505	73,678	75,300	75,756	76,454	77,381	78,529	603,007
2	First Year Net kWh	439,632,127	435,096,986	439,952,329	442,395,840	448,042,506	455,379,195	464,404,444	475,152,845	3,600,056,273
3	First Year Net Therms	19,700,361	19,833,482	19,293,612	18,772,229	19,149,357	19,555,796	19,991,485	20,456,753	156,753,076
4	Lifecycle Net kWh	2,510,118,651	2,498,392,821	2,542,239,500	2,573,145,308	2,625,288,662	2,697,648,420	2,790,705,449	2,905,394,446	21,142,933,256
5	Lifecycle Net Therms	122,087,408	125,741,452	115,060,022	112,857,392	115,845,226	119,197,115	122,918,082	127,019,042	960,725,739
6	Lifecycle CO2 (metric tons)	1,088,894	1,119,553	1,081,620	1,085,538	1,088,894	1,119,553	1,081,620	1,085,538	8,751,209

The budget requests for RENs and CCAs included in this forecast are current as of January 14, 2022. PG&E requests that budgets for any new RENs and CCAs approved after this EE application filing are incremental to PG&E's budget cap request. PG&E provides recommendations for increasing its budget cap in Chapter 3.

PACIFIC GAS AND ELECTRIC COMPANY

CHAPTER 3

RECOMMENDATIONS FOR NEW OR MODIFIED ENERGY EFFICIENCY POLICY

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CHAPTER 3
RECOMMENDATIONS FOR NEW OR MODIFIED ENERGY EFFICIENCY POLICY

A. Introduction

This chapter discusses Pacific Gas and Electric Company's (PG&E) proposals for policy modifications to support the vision outlined in Chapter 1 of this application.

Chapter 1 outlines the following goals for PG&E's energy efficiency (EE) portfolio in 2024-2031:

1) Optimize delivery of Total System Benefit (TSB);
2) Support economy-wide carbon neutrality by 2045;
3) Shape energy demand to match supply; and
4) Support customer resiliency.

To achieve these goals, PG&E proposes policy changes under two main categories: (1) changes to enable EE portfolios of the future, and (2) changes to address portfolio administration issues. These changes are summarized in Attachment A.

PG&E's portfolio forecast and plans described in Exhibit 2 of this application are largely based on current policy, rather than the changes proposed herein, except as noted below. For example, PG&E's portfolio forecast described in Exhibit 2 does not include the benefits described in Section B.1 of this chapter. However, if implemented, these policy changes would likely complement and enhance PG&E's EE strategies. If the California Public Utilities Commission (CPUC or Commission) adopts policy changes that are not incorporated into PG&E's current portfolio forecast, PG&E would update its portfolio plans in its September 2023 True-up Advice Letter (AL) or September 2025 Mid-Cycle Update AL, depending when policy changes are adopted.

The remainder of this chapter is organized as follows:

- Section B: Policy Changes to Enable EE Portfolios of the Future
- Section C: Policy Changes to Address Portfolio Administration Issues
- Section D: Conclusion

B. Policy Changes to Enable EE Portfolios of the Future

For EE portfolios to best support decarbonization, alignment of energy demand and supply, and resiliency, the regulatory framework in which they operate must evolve. The shift to TSB goals in Decision (D.) 21-05-031 helped set EE on a path toward optimizing for grid and energy system benefits, rather than simply pursuing first-year energy savings. The policy changes PG&E proposes would help EE portfolio administrators (PA) further tune their offerings for the full range of benefits EE can provide.

PG&E proposes policy changes below to: (1) value and report location- or intervention-specific energy system benefits; (2) update Integrated Demand Side Management (IDSM) rules to support comprehensive load management and enable greater program integration; (3) realize the full potential of meter-based methods for industrial process and non-building projects; (4) bolster and improve critical tools for TSB tracking and portfolio transparency; and (5) expand the range of options for procurement approaches.

1. Value and Report Location- or Intervention-Specific Energy System Benefits

In order to reflect the full value of EE interventions to the electric grid and gas system, PG&E proposes incorporating certain additional energy system benefits into the TSB calculation. While PG&E introduces these benefits below, it recommends discussion in a broader venue such as the Integrated Distributed Energy Resources (IDER) proceeding (Rulemaking (R.) 14-10-003) or its successor proceeding.

D.21-05-031 expresses a desire to "capture all of the policy goals and benefits of energy efficiency" as part of its reason for moving to TSB as a goals metric.[1] However, as of the filing of this application, the TSB calculation is largely based on current avoided cost benefits defined in the IDER proceeding.[2] IDER avoided costs capture system-average avoided costs, but may not capture all quantifiable energy system benefits, particularly those that are specific to particular locations or interventions. For example, the avoided cost calculator (ACC) tracks most avoided costs

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1 D.21-05-031 at p. 8.

2 CPUC, *Total System Benefit Technical Guidance*, Version 1.2, October 25, 2021, p. 2.

at a system level,[3] but the localized distribution system benefits discussed below would not be defined at a system level. Incorporating these additional benefits into the TSB calculation would help TSB more accurately reflect the value to the energy system of EE interventions. Incorporating these additional benefits into the TSB calculation would also align with Commission guidance on how to account for avoided gas infrastructure costs in all-electric new construction programs.[4] In addition, because EE PAs optimize their portfolios to meet TSB goals, adding these benefits into the TSB calculation would encourage EE portfolios to find ways to provide them.

Below, PG&E discusses several benefits that represent value to the electric grid and/or gas system that EE and other distributed energy resources (DER) could provide. These energy system benefits are not currently valued as avoided costs in IDER or elsewhere, nor are they currently included in the calculation of TSB. PG&E discusses strategies that could yield these benefits in Chapter 1. PG&E asserts it would be beneficial for stakeholders to explore these energy system benefits as part of a broader proceeding such as IDER or its successor.

- Localized Distribution System Benefits – PG&E envisions using locationally-targeted EE interventions to delay or reduce the need for forecasted distribution system infrastructure investments. R.13-11-005 explored locational targeting in 2014, to address transmission and generation constraints;[5] tightly targeted interventions could also focus on distribution system benefits.

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3 See 2021 DERs ACC Documentation, Version 1b, available at: https://willdan.app.box.com/v/2021CPUCAvoidedCosts/file/825224047481 (last accessed August 30, 2021).

4 As stated in the Commission's TSB Technical Guidance document:

> The full benefits portion of the TSB value is calculated by adding together the avoided costs applied on a kWh or therm basis, the avoided cost of refrigerant leakage, and the avoided gas infrastructure costs. The avoided gas infrastructure cost values were approved through Advice Letters 4386-G/6094-E and 4387-G/6095-E. These values may be updated through the EE proceeding (R.13-11-005), the IDER proceeding (R.14-10-003), or by resolution.

(CPUC, TSB Technical Guidance, Version 1.2, October 25, 2021, p. 8.)

5 D.14-10-046, Section 3.4 at pp. 79-89.

- Resiliency Support Benefits – PG&E customers currently fund the installation of microgrids or remote grids in areas where replacing other infrastructure with a microgrid will prove less costly for customers in the long run.[6] Ratepayers also pay for backup generation or energy storage for certain customers in high fire threat areas.[7] Installing EE measures prior to installation of the microgrid, generator, or energy storage can help reduce the generation or storage capacity that affected customers need, thus reducing the impact of these costs on customer rates.
- Retrofit Building Electrification Benefits – Electrification of existing buildings may confer energy system benefits. For example, when gas appliances are replaced with electric appliances in existing buildings, the gas system and gas customers could benefit from reductions in gas asset operations and maintenance (O&M) costs or the ability to decommission entire sections of gas assets. However, in almost all cases, for these potential benefits to be realized, the entire premise (rather than a selection of individual appliances) would need to be electrified.

The Commission notes in D.21-05-031 that it expects the metric it uses for EE goals will influence PAs' choices about how to manage their portfolios.[8] PG&E agrees that goals and metrics influence portfolio optimization decisions, and therefore supports the consideration of the additional benefits above to incentivize PAs to work toward the policy goals they represent and accurately capture the full range of benefits of EE interventions.

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6 A.21-06-021, Exhibit (PG&E-4), page 4.3-27 – 4.3-28 (Remote Grid), p. 4.3-45 to 4.3-46 (Temporary Distribution Microgrids).

7 For example, A.21-06-021, Exhibit (PG&E-4), page 4.3-44.

8 D.21-05-031 at p. 9 reads:

> Use of a single, lifecycle TSB metric, expressed annually, will tie the goals for the program administrators directly to the avoided cost value of energy efficiency savings, which should encourage achievement of savings that deliver high value.

2. Update IDSM Rules to Support Comprehensive Load Management and Enable Greater Program Integration

PG&E proposes that the Commission update existing IDSM rules to facilitate development and implementation of comprehensive load management programs.

The Commission's DER action plan articulates a vision in which flexible load management[9] and IDSM are prominent themes.[10] PG&E's goals in Chapter 1 also envision EE portfolios that are more closely integrated with other demand-side interventions. Offering programs that combine incentives for, enrollment in, and/or installation of multiple demand-side interventions could serve customers by streamlining participation. Integrated programs could also support the electric grid and gas system by encouraging projects that manage customers' load more comprehensively and produce greater energy system benefits. They may also support specific state policy goals. For example, Senate Bill (SB) 49[11] calls on the California Energy Commission to incorporate flexible demand-capable devices[12] into appliance standards. The rollout of these devices could support the goals of multiple demand-side management programs: providing TSB and reducing energy usage in the long term, as well as shifting load away from constrained times and toward times of higher renewable generation.

Under current rules it is difficult for PAs to offer programs that combine funding or interventions authorized in multiple CPUC proceedings or recognize benefits that accrue across multiple proceedings. To address this issue, PG&E proposes a mechanism for PAs to propose, and for the

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9 Flexible load management is defined as "steps taken to reduce power demand at peak load times or shift some of it to off-peak times." CPUC, *Distributed Energy Resources Action Plan Aligning Vision and Action*, Draft, July 23, 2021, p. 25.

10 CPUC, *Distributed Energy Resources Action Plan Aligning Vision and Action*, Draft, July 23, 2021. See tracks one and four.

11 SB 49, Approved by Governor October 9, 2019, Bill Text - SB-49 Energy: appliance standards and State Water Project assessment. (ca.gov).

12 Devices that can "schedule, shift, or curtail the electrical demand of a load-serving entity's customer through direct action by the customer or through action by a third party, the load serving entity, or a grid balancing authority, with the customer's consent" (California Public Resources Code Section 25402(7)(A)).

Commission to delegate to its staff to assess on a case-by-case basis, programs that integrate demand-side management approaches including EE, demand response (DR), distributed generation, managed electric vehicle charging, and time-varying or dynamic pricing.

In the past, the Commission has articulated a desire to offer IDSM programs and to use EE as a forum in which to do so. D.07-10-032 presented a broad vision for IDSM, ordering investor-owned utilities (IOU) to integrate demand-side customer programs "in a coherent and efficient manner."[13] IOU portfolios that followed included proposals for IDSM programs and approaches.[14] As far back as 2012, PAs had identified that lack of shared funding was a barrier to integration among demand-side programs.[15] D.18-05-041 ordered PAs to set aside funding for specific EE and DR integration objectives.[16] The use of those funds is subject to several requirements and policy principles which limit the ways IOUs can use them. Below are examples of current requirements:

- Residential IDSM efforts should focus on heating, ventilation, and air conditioning (HVAC) technologies and facilitating automatic response to time varying rates;
- Non-residential IDSM efforts should focus on HVAC and lighting control technologies;
- Non-residential customers must enroll in a DR program for at least one year, and up to three years if an incentive is involved; and
- IDSM projects should ensure there is no incremental measure or transaction cost to participate in a DR program after an EE program.[17]

While these requirements are clear in terms of the desired focus, IDSM efforts that do not meet them may offer value as well—including those that seek to integrate demand-side management approaches other than EE and DR. PG&E proposes that the Commission permit PAs to file ALs for new

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[13] D.07-10-032 at p. 5.

[14] See, for example, D.14-10-046, pp. 110-111.

[15] D.12-05-015 at pp. 317-318.

[16] D.18-05-041, OP 10, p.184.

[17] D.18-05-041, pp. 36-38 details requirements and policy principles that govern IDSM activities.

IDSM programs. The EE proceeding can serve as a venue because the Commission has historically designated it as the forum for IDSM proposals, or another venue could be explored.[18] New programs could integrate interventions and funding from different proceedings, as EE-DR IDSM funds do. New program proposals would address any needs for rule flexibility within involved proceedings, and the Commission or its staff could consider them on a case-by-case basis. This approach would offer more flexibility than creating a pot of specific IDSM funds from specific sources.

3. Realize the Full Potential of Meter-Based Methods for Industrial Process and Non-Building Projects

PG&E proposes that the Commission update policy to permit broader use of meter-based methods[19] to calculate the TSB of industrial process projects,[20] and revise rules related to the use of normalized metered energy consumption (NMEC) methods for certain non-building projects. Current decision language limits the conditions under which industrial process projects may use site-level NMEC[21] and third-party programs may use SEM,[22] as detailed below. PG&E requests the Commission update policy to make this method available for industrial process projects. This change would unlock these projects' TSB potential and could also foster the

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18 See D.12-05-015 at p. 313.

19 PG&E uses the term "meter-based methods" in this section to refer collectively to site-level NMEC as well as the Strategic Energy Management (SEM) approach. SEM calculation methods are sometimes considered to be a subset of site-level NMEC methods, and sometimes considered separate. The term "meter-based" is intended to be general and inclusive.

20 In this chapter, PG&E uses the phrase "industrial process projects" to refer to industrial O&M and behavioral, retrocommissioning, and operational activities.

21 Site-level NMEC is an approach to assessing project savings or TSB by comparing pre- and post-intervention energy consumption data from the building, site, or system. Energy consumption data are "normalized," or mathematically adjusted for factors that affect energy consumption and are unrelated to the EE intervention(s)—such as weather or production level (PG&E Resource Savings Rulebook, version 2.0, pp. 98-99. Available at: PGE_Resource_Savings_Rulebook_2nd_edition.pdf).

22 SEM is a holistic, whole-facility approach to energy savings that focuses on business practice change affecting organizational culture to reduce energy waste and improve energy intensity through behavioral and operational change (PG&E Resource Savings Rulebook, version 2.0, p. 100. Available at: PGE_Resource_Savings_Rulebook_2nd_edition.pdf).

development of new, innovative approaches to providing EE to industrial customers.

Current policy limits the conditions under which industrial process projects may use meter-based methods in two ways. First, per D.16-08-019 and D.18-01-004, only programs that follow the California Industrial SEM Design Guide (SEM Design Guide)[23] may use NMEC or similar meter-based approaches.[24] As D.16-08-019 notes and the 2016 Staff White Paper on Energy Efficiency Baselines details, concerns over the difficulty of determining whether a program influenced a customer to bring equipment up to industry standard practice drove the Commission's decision to place this limitation.[25]

Second, in D.18-01-004, the Commission concluded that SEM programs that followed the SEM Design Guide should not "count" toward IOUs' third party percentage requirements.[26] This restriction limits the adoption of industrial SEM because IOUs must outsource a majority of their programs,[27] and therefore may not have the capacity to support non-third-party-qualifying SEM programs. This limit was intended to be specific to the first two years of the first round of SEM programs, and the Commission signaled a willingness to revisit it in the future.[28] Although the Commission has not done so to date, the timing to revisit the issue is

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23 Sergio Dias Consulting, LLC, California Industrial SEM Design Guide, version 1.0 February 8, 2017 https://pda.energydataweb.com/api/downloads/1758/CA_Ind_SEM_Design_Guide_v1.0.pdf.

24 D.16-08-019 declines to apply default existing conditions baseline to industrial and agricultural process projects at 37-38, but permits the use of NMEC through SEM programs at 38-39. D.18-01-004 at 47 clarifies and reaffirms the limitation. The CPUC's NMEC rulebook reiterates this rule on page 8.

25 D.16-08-019, Sec. 3.8 at pp. 37-43; *E-Mail Ruling Attaching Corrected Version of Staff Whitepaper on Energy Efficiency Baselines and Extending Comment/Reply Deadlines,* R.13-11-005, April 28, 2016, pp. 24-25.

26 D.18-01-004, Conclusion of Law 27, pp. 59-60.

27 D.18-01-004, OP 1, p. 61.

28 D.18-01-004 at pp. 47-48.

appropriate given the recent release of the draft 2018-19 Industrial SEM Impact Evaluation.[29]

Two policy changes could resolve these issues. The Commission could:

1) Permit the use of NMEC for industrial process projects that meet site-level NMEC qualifying criteria; and/or
2) Permit PAs to count programs that follow the SEM Design Guide toward their third-party outsourcing targets.

PG&E requests that the Commission make both changes, for the reasons discussed below.

The first policy change would allow greater flexibility in program design and make it possible for industrial programs to use both custom and NMEC methods, whichever is appropriate for the project. The Commission could still assess the appropriateness of projects on a case-by-case basis.[30] In addition, it could encourage the development of new, innovative industrial project approaches that incorporate feedback from metered energy consumption data.

The second policy change would encourage further expansion of the current industrial SEM approach, and the full incorporation of the best practices in the SEM Design Guide into programs managed and otherwise designed by third parties. The current SEM approach's value is demonstrated in the positive results of a recent impact evaluation, which

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29 SBW Consulting, Inc. *2018-19 Industrial Strategic Energy Management (SEM) Impact Evaluation:*
January 31, 2022. Available at:
https://pda.energydataweb.com/api/view/2582/GroupD-SEM 2018-19 Impact Evaluation PDF Final.pdf.

30 *E-Mail Ruling Attaching Corrected Version of Staff Whitepaper on Energy Efficiency Baselines and Extending Comment/Reply Deadlines,* R.13-11-005, April 28, 2016, p. 24.

found high realization rates and a near-1.0 net-to-gross ratio—indicating that claimed savings largely withstood the scrutiny of evaluators.[31]

Should the Commission approve these changes regarding industrial process projects, PG&E respectfully requests that the Commission direct Energy Division staff to update the NMEC Rulebook,[32] and revisit associated language about the permissibility of using NMEC for other non-building projects to ensure it is aligned with Commission decision language and intent. For example, the current NMEC Rulebook prohibits the use of NMEC for all projects outside of existing buildings,[33] which may be interpreted to include agricultural process projects. However, D.16-08-019 authorizes the use of NMEC for agricultural maintenance, operational, and retrocommissioning projects.[34] In addition, PG&E requests the Commission or its staff clarify rules around the permissibility of NMEC to building-adjacent projects, such as parking lot lights.

Changes to policy on the appropriate uses of site-level NMEC or other meter-based calculation methods could be addressed in the NMEC working group, which is in progress as of Q1 2022, or in another regulatory venue.

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31 SBW Consulting, Inc. *2018-19 Industrial Strategic Energy Management (SEM) Impact Evaluation:*
January 31, 2022. Available at:
https://pda.energydataweb.com/api/view/2582/GroupD-SEM 2018-19 Impact Evaluation PDF Final.pdf.
Realization rate is the ratio of project savings that a PA claims to the project savings calculated by a Commission-contracted evaluator. A higher realization rate indicates that evaluators found a claim was more accurate. Net-to-gross ratio is the ratio of savings net of free ridership (that is, savings that would not have happened in the absence of the program), compared to the observed savings, some of which might be driven by factors other than the program. A 1.0 net-to-gross ratio indicates that all of a project's savings were attributable to the program.

32 CPUC, *Rulebook for Programs and Projects Based on Normalized Metered Energy Consumption*, version 2.0, January 7, 2020. (CPUC NMEC Rulebook). Last accessed January 8, 2022 at:
https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/n/6442463694-nmec-rulebook2-0.pdf.

33 CPUC NMEC Rulebook, p. 8: "NMEC projects must occur in existing buildings."

34 D.16-08-019 at p. 43.

4. Bolster and Improve Critical Tools for TSB Tracking and Portfolio Transparency

PG&E proposes that the Commission bolster and improve two tools PAs depend on to run EE portfolios: the California Energy Data and Reporting System (CEDARS) and the Cost Effectiveness Tool (CET).[35] CEDARS is the Commission website that houses PAs' monthly and quarterly program tracking data, quantitative portfolio forecasts, and program information and implementation plans. High-level data on each PA's progress toward its goals and cost effectiveness are also available in a dashboard format. The CET is a calculation tool housed within CEDARS that is used to calculate TSB and cost-effectiveness.

Despite the essential role they play in facilitating TSB calculation and stakeholder transparency, funding for CEDARS and the CET has historically been limited, and upgrades that could improve portfolio functioning have lagged. PG&E proposes that the Commission encourage Energy Division staff to increase funding for CEDARS and the CET and more thoroughly engage PAs and other stakeholders in their oversight and maintenance.

CEDARS and the CET are key to the functioning of EE programs and portfolios in the following ways:

- *TSB calculation*: The CET is the source of official TSB calculations. Therefore, users will need to run the CET every time they want to understand a project or program's TSB, for project development, program management, or calculation of performance payments.
- *Transparency and archiving historical information:* CEDARS makes available to stakeholders detailed information on the achievements of EE programs, including historical performance information. Stakeholders can sign up to receive electronic alerts when information is posted or updated. In addition, detailed, anonymized and

35 CEDARS is the CPUC's EE portfolio data website. EE PAs upload monthly tracking data to CEDARS, as well as quarterly savings claims, budget and portfolio forecasts, and program implementation plans and other program documentation. Stakeholders may view PAs' performance against their goals, read program documents, and download program performance data. The CET is a module embedded in CEDARS that executes TSB and cost-effectiveness calculations. PAs upload a spreadsheet containing parameters needed to calculate TSB and cost-effectiveness, and the CET returns those values, as well as other such as avoided GHG emissions.

non-confidential data on programs and installed projects are available for public download.

However, these tools require more resources for ongoing maintenance, to add functions to comply with Commission direction or improve program and portfolio efficiency, and to ensure they can be updated quickly and without errors in response to policy changes. Recent compliance updates to the tools have included the addition of avoided gas infrastructure costs and low-global warming potential refrigerant benefits to the CET, and the addition of functionality to properly display the costs and benefits of statewide programs to CEDARS. Beyond compliance updates, examples of improvements that would enhance program and portfolio efficiency include:

- Capability of the CET to accept project-specific load shapes.[36] This would enable more accurate tracking of when energy savings occur, and therefore more accurate calculation of TSB, which values system benefits by time of day and year;
- Addition of an application programming interface (API) to allow system-to-system communication between PAs' and implementers' project data systems and the CET and CEDARS, to enable automated TSB calculation and significantly streamline reporting;
- Creation of more robust documentation and training for CET users, so that implementers, PA staff, and other stakeholders feel equally equipped to use the tool, and technical experts can replicate and review the code; and
- Addition of a module to allow CPUC-contracted evaluators to access more detailed program tracking data than is available for public download, such that acquisition of data for impact evaluations is as efficient as possible.

In addition to an increase in funding, PG&E proposes the Commission direct Energy Division staff to work with PAs to create a governance committee for both the CET and CEDARS, which would provide a venue in which PAs and regulators could prioritize when and how improvements are

[36] Load shapes show the distribution of energy reduction over each hour of the year, for a total of 8,760 values.

made, oversee the budget, and advocate to ensure that the important role these tools play in the functioning of EE portfolios is recognized. One recent positive step in this direction is the Energy Division's establishment of a CET Project Coordination Group, however, PG&E envisions a more comprehensive governance committee that addresses both CEDARS and the CET. The governance system could be modeled on the California Technical Forum's (CalTF) implementation of the Electronic Technical Resource Manual (eTRM) database of EE ex ante values.[37] Through a collaborative effort between CalTF, stakeholders, and the Commission, the eTRM now serves as the data source of record for ex ante values.[38] PG&E envisions that the governance committee could engage a coordinator to facilitate its meetings, work with software developers, provide project management, and report to governance committee members on progress. The governance committee could include PAs and energy division staff; other stakeholders could participate ad hoc.

One possible mechanism for increasing funding for CEDARS and the CET is for the IOUs to provide funding for their development from the PA portion of their Evaluation, Measurement & Verification (EM&V) budgets.[39] PG&E has included funding for this effort in its EM&V forecast budget in Exhibit 2, Chapter 6.

5. Expand the Range of Options for Procurement Approaches

To enable EE portfolios that can adapt to both gradually evolving and quickly shifting market needs, PG&E requests that the Commission expand the set of acceptable procurement approaches for third party programs. The Commission contemplates a discussion of modifications to the third-party

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37 Ex ante values are quantitative parameters used to calculate energy savings, TSB, or cost-effectiveness values PAs report to the Commission.

38 Resolution (Res.) E-5152, p. 25.

39 As detailed in Exhibit 2, Chapter 6, Section C, a set four percent of each PA's budget is devoted to EM&V, and those EM&V funds are allocated between PAs and the CPUC. CEDARS development and maintenance are currently funded out of the CPUC's portion of EM&V funds. As detailed in Exhibit 2, Chapter 6, Section 6, IOUs may request a larger-than-default share of EM&V funds. PG&E envisions that IOUs could request a larger share of EM&V funds to cover CEDARS and CET development costs if necessary. This would parallel the manner in which EM&V funds supported eTRM development.

solicitation process in the Assigned Commissioner and Administrative Law Judges' Amended Scoping Ruling (December 2021 Scoping Ruling).[40] The December 2021 Scoping Ruling gives an example of revisiting the use cases for a single-stage solicitation process. PG&E supports this idea and proposes to expand beyond one- and two-stage EE solicitations to also permit all-source requests for proposal (RFPs) and a "market access" procurement model, as authorized for near-term summer reliability programs in D.21-12-011. PG&E discusses in more detail how it would use these procurement models to manage its portfolio in Exhibit 2, Chapter 5, Section E.2. PG&E also requests that the Commission or its staff regularly engage with stakeholders to explore additional procurement approaches other than those listed here.

D.18-01-004 established a two-stage solicitation process currently used for third-party EE programs.[41] As PG&E and other stakeholders have previously noted, this process requires significant time and resources from program administrators and implementers and is not well-suited to respond to rapidly-evolving market conditions.[42] D.21-12-011 authorizes the use of a more flexible "market access" approach to procurement of summer reliability-focused projects during 2022-2023. In this approach, rather than signing a contract to deliver on certain goals or metrics, implementers who meet pre-determined eligibility criteria may submit projects as they identify them.[43] This approach may appeal to smaller implementers who lack resources to participate in large RFPs. D.21-12-011 also permits single-stage solicitations for reliability-focused programs,[44] whereas

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40 *Assigned Commissioner and Administrative Law Judges' Amended Scoping Ruling*, December 23, 2021, p. 4.

41 D.18-01-004, p. 31.

42 See, for example, PG&E's Opening Comments to the Administrative Law Judge's E-Mail Ruling Requesting Comments/Proposals to Address Governor's Proclamation of July 30, 2021, pp. 10-11; Comments of Recurve Analytics, Inc. on Email Ruling Requesting Comments/Proposals to Address Governor's Proclamation of July 30, 2021, p. 5.

43 D.21-12-011 at pp. 24-25.

44 D.21-12-011 at pp. 34-35.

single-stage solicitations have been limited for mainstream EE programs.[45] As discussed in Exhibit 2, Chapter 5, Section E.2, two-stage, single-stage, and market access solicitation approaches offer different benefits. In particular, two-stage solicitations can be effective for managing high volumes of submittals; single-stage solicitations are comparatively streamlined and offer versatility through scoring criteria based on complexity of need; and a "market access" approach may create opportunities for smaller providers, increase customer choice, and lower delivery risk for implementers due to the shorter-term nature of contracts. Overall, approaches that streamline the solicitation process and allow PAs to move more nimbly to solicit new programs could open the door to program innovation or participation in EE by a more diverse range of implementers.

In addition to the use of the two-stage, single-stage, and market access models for EE interventions, PG&E advocates that the Commission delegate to Energy Division staff the authority to permit EE PAs to run all-source solicitations on a case-by-case basis. These solicitations are technology neutral and would be open to EE interventions as well as other DERs, allowing comparisons between complex and dissimilar program proposals. Similar to the logic by which EE could become a venue for IDSM proposals described in section B.2 of this chapter, EE could become a venue for all-source solicitations for DERs.

New procurement approaches also come with risks and tradeoffs, as Exhibit 2, Chapter 5, Section E.2 details. PG&E understands that the Commission may wish to identify opportunities for PAs to experiment with them prior to adopting them broadly. Near-term summer reliability programs offer an opportunity to experiment with single-stage solicitations and the "market access" approach. PG&E requests that at a minimum, the Commission engage stakeholders in providing feedback and reviewing the results of these experiments, and that if the results are positive, the Commission permit other EE programs to use these approaches. Furthermore, PG&E requests that the Commission identify opportunities to

45 D.18-01-004 at p. 31.

permit PAs to run all-source solicitations or consider proposals from PAs to do so.

C. Policy Changes to Address Portfolio Administration Issues

PG&E proposes changes below to: (1) treat future approved PA budgets as incremental to IOUs' application budget caps; (2) align portfolio planning timelines for all PAs; (3) require joint cooperation memoranda (JCMs) for all PAs; (4) simplify the process for regulatory filings that request cost recovery; (5) clarify the timing of custom claims and NMEC true-up claims; and (6) develop a process to regularly update EE statewide funding percentages. Each of these changes would address a portfolio administration issue to help EE PAs and their program portfolios function more smoothly, better serve customers, and meet regulatory goals.

1. Treat Future Approved PA Budgets as Incremental to IOUs' Application Budget Caps

PG&E proposes that, when new PAs are approved to administer EE programs outside of the four-year application cycle,[46] the new PAs' budgets be considered incremental to IOUs' eight-year application budget caps.[47] D.21-05-031 requires PAs to request an eight-year budget cap in each application they file, covering the eight years the business plan element of their application addresses. The budget cap can only be revised every four years—when the PA files a new application.[48] Currently, Community Choice Aggregators (CCA) and Regional Energy Networks (REN)[49] may propose to become new EE PAs at any time.[50] REN and CCA budgets are

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46 Established per D.21-05-031, OP 5, pp. 81-82 and Section 5.

47 As established per D.21-05-031, OP 5, pp. 81-82.

48 D.21-05-031, OP 5, pp. 81-82.

49 RENs are local government entities or collaborations that independently administer EE programs. The concept was originally introduced in D.12-05-015 (see Sec.6.1.3). D.19-12-021, Section 2, discusses updated Commission policies on RENs.

50 D.14-01-033, OP 4 and OP 6, pp. 50-51; D.19-12-021 OP 2, pp. 88-89. The following pathways exist for these entities to propose EE portfolios: a CCA may file an application to administer an EE portfolio (D.14-01-033 OP4); a CCA may alternatively file a Tier 3 AL "electing" to administer a smaller and more limited EE portfolio (D.14-01-033, OP 6); and a new REN may form by bringing a motion in an open EE proceeding (D.19-12-021, OP 2).

part of IOUs' EE cost recovery budgets[51] because IOUs collect funds from customers to pass through to REN and CCA PAs that operate in their territory.[52] If a new REN or CCA is approved to administer EE programs between the application filing dates for existing PAs, no regulatory mechanism currently exists for IOUs to adjust their budget caps. If enough RENs or CCAs within an IOU's territory become portfolio administrators in between application filing dates—or if their approved budget requests are large enough—the IOU must either reduce its own programs or exceed its approved budget cap.

To avoid this issue, PG&E respectfully requests that the Commission exclude REN and CCA costs from IOUs' application budget caps. PG&E also asks that the Commission affirm each existing PA's application budget cap applies only to that PA itself. This affirmation would be consistent with the Commission's acknowledgement in Res.E-5166, *Certification of San Jose Clean Energy's Energy Efficiency Program Administration Plan,* that budget for a new REN or CCA is "incremental" to the budget of the IOU(s) whose territory the REN or CCA overlaps.[53]

PG&E's eight-year budget cap request described in Chapter 2 reflects the budget needs of non-IOU PAs approved for PA status as of January 14, 2022 for program years 2024-2031. Should REN or CCA filing budgets differ from what was provided by January 14, 2022, or should a new non-IOU PA be approved to administer EE programs in PG&E's territory, PG&E would need to amend its authorized budget cap request. If the policy change requested in this section is not adopted, PG&E will work with Commission staff to determine the correct regulatory process by which to

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51 See, for example, PG&E's AL 4303-G-A/5936-E-A, p. 32.

52 This is because RENs are not energy providers; IOUs act as billing agents for CCAs; and CCAs that apply to administer EE portfolios are not limited to serving customers to whom they provide energy, per a June 20, 2021 Administrative Law Judge's ruling.

53 Res.E-5166, p. 19-20: "[W]ith regards to PG&E's comments that the budget to fund SJCE will result in incremental costs because PG&E has not accounted for the budget of SJCE in their current rates and collections… we will strike part of the language under the estimated cost heading on page one to remove that this resolution will not lead to incremental additional costs. While we are confident that SJCE's budget can be absorbed with [PG&E] unspent/uncommitted funds, this may not always be the case as future CCAs elect-to-administer ratepayer funded EE programs."

amend the request, if needed. However, if this policy change is adopted, PG&E's budget cap request would not need to be amended.

2. Align Portfolio Planning Timelines for All PAs

PG&E proposes that the Commission align the planning and funding timelines of all EE PAs while allowing sufficient opportunities for potential new program administrators to enter.[54] Currently, CCAs and RENs may propose to become new EE PAs at any time. In addition to the budget challenge discussed in the previous section, this staggered timing presents several other planning challenges as PG&E has previously presented.[55] Staggered timing makes it difficult for regulators, stakeholders, and existing PAs to assess the potential for program duplication in a new PA's proposal and makes it difficult for existing PAs to plan their programs. PG&E recognizes that the Commission stated its intent to address "rules associated with CCAs who elect to administer energy efficiency programs and RENs" in the second half of 2022 in the December 2021 Scoping Ruling, and acknowledges that this proposal may need to be considered prior to 2024.[56]

Alignment of the portfolio planning cycles for all PAs, new and existing, would confer multiple benefits. First, it would help stakeholders and regulators assess whether offerings serving the same territory complement or duplicate each other. Second, it would facilitate coordination between PAs who operate in overlapping territory or serve overlapping customer populations, helping to minimize program redundancy and customer confusion. Third, it would ensure that when new PAs come online, they conform to the Commission's most recent portfolio planning guidance and expectations as quickly as is reasonable.

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54 Public Utilities Code (Pub. Util. Code), Sec. 381.1, notes that the Commission "shall consider the value of program continuity and planning certainty and the value of allowing competitive opportunities for potentially new administrators."

55 *PG&E's Reply Comments on Administrative Law Judge's Ruling Seeking Comments on Inland Regional Energy Network Business Plan,* pp. 2-3; *Comments of Pacific Gas and Electric Company on Draft Resolution E-5166*, pp.3-4; *Pacific Gas and Electric Company's Response to CleanPowerSF's Advice Letter 17-E, Election to Administer Energy Efficiency Program Tier 2 Advice Letter*; p. 2.

56 *Assigned Commissioner and Administrative Law Judges' Amended Scoping Ruling*, December 23, 2021, p. 6.

To ensure alignment of portfolio planning schedules and the timely implementation of the requirements in D.21-05-031, PG&E recommends that, the Commission implement one of the following changes:

Option (1): Align new PA filings with the submission of existing PAs' applications, true up ALs, or mid-cycle review ALs.

This change would require all potential new PAs—including RENs, apply-to-administer CCAs, and elect-to-administer CCAs—to file their applications or elect-to-administer ALs in alignment with when existing PAs file their applications every four years,[57] or with the portfolio true-up and mid-cycle review ALs that PAs will file each September in the odd years.[58] To ensure that portfolio planning cycles remain consistent, the length of new PAs' portfolio plans would vary based on the milestone with which their filing aligns (specifically: a new PA filing alongside existing PAs' applications or true-up ALs would file a four-year plan; a new PA filing alongside existing PAs' mid-cycle review ALs would file a two-year plan). This change would have the benefit of aligning all PAs' portfolio cycles and is PG&E's preferred approach.

To ensure that IOUs can include cost recovery for new PAs who operate in their service territory in their applications or ALs, new PAs would need to provide final budgets to IOU PAs far enough in advance of the filing date for the upcoming application or AL that IOUs can incorporate those proposals into their revenue requirements without creating a need for supplemental filings or substitute sheets. Since this issue also relates to existing non-IOU PAs, PG&E discusses a policy proposal to address it further down in this section.

PG&E acknowledges that this proposal would limit the times at which new PAs could access funds. However, because new PAs would have the opportunity to request to become administrators of EE funds every two years, PG&E believes this proposal strikes a balance between the planning and coordination benefits of aligning portfolio cycles, and the risks of limiting times at which new PAs may elect or apply.

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57 See D.21-05-031, OP 5, pp.81-82 and Section 5.

58 D.21-05-031, OP 10, p. 83.

In considering the optimal timing of these filings, the CPUC may wish to consider whether it is appropriate for new PAs to file portfolio plans within a certain amount of time after existing PAs file theirs, to facilitate new PAs' identification and filling of gaps in existing portfolios. This topic may be appropriate for the policy discussion envisioned in the December 2021 Scoping Ruling.

Option (2): Limit consideration of funding for new PAs' portfolios to the remainder of the current program cycle.

PG&E offers this option as an alternative if the Commission determines that it does not wish to pursue the first option above. This would mean, for example, that if a new PA proposes an EE portfolio three years into a given portfolio cycle, its funding would be approved for one year. To bring the new PA's portfolio planning timeline in line with that of existing PAs, the Commission could consider permitting new PAs in this situation to submit interim filings for consideration alongside existing PAs' applications, such as a Tier 2 AL similar to the true-up and mid-cycle ALs described in D.21-05-031.[59] This interim filing could be submitted in coordination with existing PAs' next applications or true-up ALs, whichever filing date comes most immediately after the new PA's approval to administer EE programs.

This approach would place new PAs' portfolios on the same schedule as those of other PAs as quickly as possible, while continuing to permit new PAs to file applications or elect-to-administer ALs at any time.[60] It would also provide an opportunity to bring new PAs into alignment with up-to-date Commission rules and guidance as quickly as possible. CCAs that apply to administer EE programs are already subject to the most up-to-date rules

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59 D.21-05-031 OP 10, p. 83.

60 See *PG&E's Reply Comments to the Administrative Law Judge's Ruling Seeking Comment on Inland Regional Energy Network Business Plan*, p. 3; *Opening Comments of CalAdvocates to the Administrative Law Judge's Ruling Seeking Comment on Inland Regional Energy Network Business Plan*, p.2.; *Opening Comments of Southern California Edison to the Administrative Law Judge's Ruling Seeking Comment on Inland Regional Energy Network Business Plan*, pp. 3-4. This topic is also discussed in D.12-11-013, pp. 8-9.

and guidance,[61] but under current rules, RENs and elect-to-administer CCAs are not.

PG&E respectfully requests that the Commission consider these solutions and adopt one of them. PG&E strongly recommends its first option to align new PA applications or elections with existing PA filings, because it most directly addresses the issue of staggered timing. However, PG&E offers the second option as an alternative.

3. Require Joint Coordination Memoranda for All PAs

To ensure that there is a mechanism for coordination among PAs that offer programs in the same service territory, PG&E requests the Commission clarify that its Joint Cooperation Memorandum (JCM) filing requirements extend to all instances in which IOU and non-IOU PAs offer EE programs in overlapping territory. D.18-05-041, OP 38 establishes the JCM process:

> [t]he energy efficiency program administrators must submit annual joint memoranda of cooperation between energy efficiency program administrators with overlapping service areas.[62]

Currently, parties differ with respect to the applicability of JCMs to CCAs who elect to administer EE portfolios—rather than filing applications. PG&E believes that JCMs should apply to all PAs who work in overlapping territory, because the JCMs are the primary mechanism through which PAs can coordinate on issues such as avoiding program overlap, double-dipping, and customer confusion. The need for that coordination is no less when a PA has elected to administer an EE portfolio. The Commission has recognized the growing importance of coordination, stating, "The CPUC agrees with PG&E that with more PAs offering EE programs there will be the need for increased coordination with other PAs who overlap service territory."[63] The Commission indicated in Res.E-5180 that it intended to take up this issue in the decision on PAs' 2024-2031 application filings;[64] like the policy

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61 D.14-01-033, OP 4, pp.50-51.

62 D.18-05-041, OP 38, pp.190-191.

63 Res. E-5050 at p.23.

64 Res.E-5180 at p. 23.

proposals discussed in sections C.1 and C.2., this proposal may also be appropriate for the discussion of elect-to-administer CCA rules presaged in the December 2021 Scoping Ruling.

As PG&E has noted previously,[65] it interprets the language of relevant decisions to communicate that the JCM process should apply uniformly to all types of PAs, including elect-to-administer CCAs. D.21-05-031, Ordering Paragraph (OP) 7 reaffirms the JCM requirement applies to all PAs:

> [a]ll program administrators shall continue to prepare and submit Joint Cooperation Memoranda (JCMs), according to the existing requirements.[66]

D.14-01-033, which operationalizes the two pathways for CCAs to administer EE programs outlined in Pub. Util. Code Sec. 381.1, communicates in its discussion of the elect-to-administer option that it is a pathway to "energy efficiency program administration," like filing an application under Pub. Util. Code Sec. 381.1(a-d).[67] Finally, the CPUC's EE Policy Manual defines "Program Administrator" simply as "[a]n entity tasked with the functions of portfolio management of EE programs and program choice."[68] The applicability of the JCM requirement to all PAs may be unclear because D.18-05-041, OP 38 includes a list of specific PAs required to file JCMs, and does not include any CCAs that elected to

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65 *Comments of Pacific Gas and Electric Company on Draft Resolution E-5166, pp. 5-6; Subject: Pacific Gas and Electric Company's Response to CleanPowerSF's Advice Letter 17-E, Election to Administer Energy Efficiency Program Tier 2 Advice Letter, p. 3.*

66 D.21-05-031, OP 7, p. 82.

67 D.14-01-033, p. 20, Section 3.2.4 of the decision begins, "As noted previously, SB 790 – modified Section 381.1 to give CCAs two options for *energy efficiency program administration*" (emphasis added).

68 CPUC, *Energy Efficiency Policy Manual*, version 6.0, April 2020, p. 81-2. While the policy manual is not formally adopted by the CPUC (see p. 8 of the manual), it communicates Commission staff understanding of CPUC policy rules stipulated in decisions and resolutions. It is therefore a relevant source for the generally accepted understanding of terms such as "program administrator."

administer EE programs.[69] However, this does not necessarily imply that the JCM requirement applies to certain PAs and not others.

PG&E requests the Commission clarify that all IOU and non-IOU PAs that work in overlapping territory must file JCMs. Doing so would ensure that these PAs have a formal mechanism for collaboration and coordination, to the ultimate benefit of the customers they serve. As with the above proposal regarding PA filing timelines, PG&E acknowledges that this issue may be discussed in the second half of 2022 per the December 2021 Scoping Ruling for this proceeding.[70]

4. Simplify the Process for Regulatory Filings that Request Cost Recovery

To simplify the process for regulatory filings that request cost recovery or provide budget information aggregated across multiple PAs in one service territory, PG&E requests that the Commission authorize staggered due dates for IOU PAs and non-IOU PAs. Specifically, PG&E requests that the Commission authorize IOU PAs who share territory with non-IOU PAs to submit territory total or rate impact information two weeks after the primary submission deadline. This approach will enable these IOUs to file total cost recovery and rate impact figures that reflect final budgets and other information for non-IOU PAs, without restricting the time for the non-IOU PAs to finalize those numbers.

Currently, when filing ALs or applications that request to recover the cost of EE programs, IOUs must request budgets early from RENs and

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69 D.18-05-041, OP 38, p. 190-191. However, this specificity must be considered in context. D.18-05-041 approved the EE business plans of a group of eight PAs, (see D.18-05-041, p. 1), and so it is logical that it would address subsequent filing requirements of those specific PAs. MCE was the only CCA included in this group, so it makes sense that the decision at certain points refers to "MCE" rather than to "CCAs" generally (see, for example, D.18-05-041, pp. 122-3). Further adding complexity, approximately one month before D.18-05-041 was issued, the Commission certified the election to administer EE programs of Lancaster Choice Energy (Lancaster), a CCA (in Res.E-4917). D.18-05-041 does not direct Lancaster to file a JCM with any IOU. However, this may be because D.18-05-041 was issued early in Lancaster's tenure as a PA, or because D.18-05-041 focuses on requirements for the PAs whose business plans it approves.

70 See *Assigned Commissioner and Administrative Law Judges' Amended Scoping Ruling*, December 23, 2021, p. 6.

CCAs with whom they share territory so that the IOUs can incorporate REN and CCA totals into their calculations. Last-minute changes made to non-IOU PAs' budgets can result in the need for IOUs to file supplemental filings or substitute sheets, which adds administrative work and can make it difficult for stakeholders to identify final cost and budget information. A staggered deadline would enable non-IOU PAs to make relatively late budget adjustments without causing IOUs to file supplemental filings or substitute sheets, allow IOUs to confirm that they are using truly "final" figures to calculate rate impacts, and reduce the potential for stakeholder confusion.

5. Clarify the Timing of Custom Claims and NMEC True-up Claims

PG&E respectfully requests that the Commission clarify that custom measure and project TSB[71] should be reported when all steps to finalize TSB calculations have been completed—including physical installation, commissioning, measurement and verification (M&V) of TSB, and post-install quality control checks performed by the PA or the CPUC. PG&E believes that current guidance leaves room for differing interpretations, which has caused confusion in ex-post impact evaluations. A uniform approach that requires custom project TSB to be finalized prior to reporting will help to dispel confusion. Alongside this proposal, PG&E also makes a related request that the Commission update a requirement that places a time limit on NMEC claims, to account for the reporting process established for NMEC claims and accommodate projects that track savings over multiple years.

Three CPUC decisions address aspects of the timing of claims for custom projects.

- D.04-09-060 introduces guidance that (1) energy savings of "actual installations" of projects, not merely commitments, should be counted

[71] Throughout this section, PG&E uses "TSB" and in some cases "savings/TSB" to refer to savings, TSB, and other ex ante parameters that PAs report. Decisions cited in this section were issued during a time when EE goals were set in energy and demand savings and use the word "savings."

toward savings goals, and (2) savings claims should be reported in the calendar year in which measures are installed;[72]

- D.05-04-051 reaffirms this guidance and orders program administrators to follow it.[73] Neither D.04-09-060 nor D.05-04-051 defines when installations are to be considered completed, leaving room for interpretation as to whether "actual installation" means physical installation only, or also includes steps to finalize the project savings/TSB, such as those mentioned above; and
- D.11-07-030 requires PAs to follow the custom project ex ante review process,[74] which requires PAs to calculate and pay final customer incentives, and to report and claim any savings adjustments ***only after*** the CPUC Energy Division's post-installation inspection is complete.[75]

PG&E proposes that project savings be reported once all steps to finalize savings/TSB, including M&V tasks, are complete. This is consistent with D.11-07-030, however, when M&V steps cause project finalization to fall in a different year than when the project's physical installation began, a conflict may arise if a stakeholder interprets the two earlier decisions as requiring that custom projects must be claimed in the year in which their physical installation is completed. As custom projects undergo more

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72 D.04-09-060, p. 33.

> [O]nly actual installations should be counted towards these goals, and not commitments. That means, for example, that the savings reported for PY2006 will reflect measures actually installed during calendar year 2006 (January through December), regardless of whether the commitments to install those measures were made in PY2006 or in prior program year(s).

73 D.05-04-051 OP 17, pp. 96-97:

> [O]nly actual installations should be counted towards these goals, and not commitments, with the exception discussed below. That means, for example, that the savings reported for PY2008 will reflect measures actually installed during calendar year 2008 (January through December), regardless of whether the commitments to install those measures were made in PY2008 or in prior program year(s).

74 D.11-07-030 OP 7, p. 49 requires the IOUs to follow the custom project ex ante value review process in Attachment B.

75 D.11-07-030 Attachment B details the "pre-installation review" and "post-installation review" processes that allow the Energy Division to provide input on ex ante savings development, including on post-installation M&V on projects selected by Energy Division (ED). The IOUs are required to report in claims any savings adjustments made after ED's post-installation M&V inspection.

extensive M&V to verify ex ante calculations, projects—especially larger, more complex, and projects with higher savings/TSB—take longer to close out. This increases the likelihood the physical installation and the finalization of savings will not fall into a single calendar year. In addition, due to their complexity, these projects are much more likely to have their post-install M&V savings updated from pre-installation estimates. Therefore, reporting savings on a provisional basis with the prior year's savings claims would add administrative burden and administrative cost for limited benefit and would increase the likelihood of confusion among stakeholders who review ex ante claims data.

PG&E proposes that to resolve this matter, the Commission clarify that PAs should claim savings for custom projects when project savings verification steps are final. PG&E proposes the following language:

For custom projects, installation date shall be determined by project finalization date, defined as the date when energy efficiency measures are installed and commissioned, and all monitoring and verification (M&V) tasks are completed, as determined by the program administrator.

For custom projects selected for CPUC ex ante review, installation date shall be determined by project finalization date, determined after completion of the CPUC review and approval of ex ante values, and determined by the program administrator upon completion of all M&V tasks.

M&V tasks may include, but are not limited to, collection and approval of invoices or other measure cost data, collection of all required forms such as contractor license verification, and verification that approved savings and other values are properly entered in the program administrator's savings and/or TSB calculations.

Similarly, PG&E also requests that the Commission eliminate an out-of-date requirement related to the timing of NMEC claims. The *Administrative Law Judge's Ruling Issuing Revised Rulebook for Programs and Projects Leveraging Normalized Metered Energy Consumption*[76] (NMEC Rulebook Ruling) requires PAs to "submit a final claim, with savings

[76] This ruling, issued January 7, 2020, accompanied the release of the version of the Commission's NMEC Rulebook in use as of the time of this filing. Available at: EnergyEfficiency2015-BeyondRollingPortfolios_Ruling_CPUC_20200107_591273.pdf.

calculated using NMEC methods after the performance period is complete, for all NMEC-based savings counted toward goal attainment by January 31 of two years after the program year installed. For example, to count savings form 2020 installed projects toward 2020 goal attainment, the PA must submit a final savings claim for those projects by January 31, 2022."[77] This requirement does not account for the fact that NMEC project or program M&V may not be complete by January 31 of the year after the NMEC performance period is completed—for example, because project calculations may take longer to execute. This requirement also does not account for the fact that some programs and projects may have performance periods that are too long to be able to report a final claim by January 31 of two years after the installation year.

After the NMEC Rulebook Ruling was issued, PA and CPUC staff collaborated to develop guidance and a process for reporting on NMEC programs and projects.[78] Through this process, PAs report initial claims when project installation is complete, based on estimates of project savings/TSB, then "true-up" these estimates after NMEC M&V is complete.[79] The use of estimated and true-up claims allows PAs to account for the impacts of NMEC projects on a rolling basis, concurrently with deemed and custom project/program impacts. As a result, the time limit put in place in the NMEC Rulebook Ruling is no longer necessary, and PG&E recommends striking this requirement.

6. Develop a Process to Regularly Update Statewide Funding percentages

PG&E requests that the Commission direct Energy Division staff to establish a process to regularly update IOU funding share contribution percentages for EE statewide programs. Development of this

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77 NMEC Rulebook Ruling, p. 9. The term "performance period" refers to the period after project installation or implementation is complete, during which energy usage data is monitored so that savings/TSB may be calculated using NMEC methods.

78 The basic structure of NMEC reporting is captured in *Energy Division Staff Guidance: NMEC Reporting,* a document shared by an Energy Division staff member with PA EE reporting staff by email on April 24, 2020. The NMEC reporting process has evolved since 2020 but this document captures the basic principles.

79 See for example *Energy Division Staff Guidance: NMEC Reporting*, p. 2 and p. 3.

process could simply result from a discussion between Commission staff and IOUs, or from engagement with a broader set of stakeholders. Current funding share proportions are based on the IOU goals and budgets from several years ago;[80] the goals have since been superseded and the budgets were only authorized through 2025. PG&E requests that the IOUs, in coordination with Energy Division staff, revisit the inputs for the contribution percentage calculations prior to the planned 2023 True Up AL covering 2024-2027. In addition, PG&E respectfully requests that the Commission direct staff to work with IOUs to develop a process for regular updates to these percentages, which could be tied to the four-year portfolio application cycle, or to the EE Potential and Goals Study updates.

D. Conclusion

If adopted, PG&E's proposals detailed above would combine to help EE portfolios shift toward the future envisioned in D.21-05-031 and the CPUC's DER Action Plan, version 2.0, in which EE focuses on producing energy system benefits, integrates with other demand-side programs, and supports flexible load management. They would also help EE portfolios function more efficiently.

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80 Funding shares for statewide programs are based on a methodology described in a joint AL filed by the IOUs in 2018 (PG&E's AL 5373-E-A/4009-G-A, *Supplemental: San Diego Gas & Electric Company, Southern California Gas Company, Southern California Edison Company, and Pacific Gas & Electric Company's Shared Funding Mechanism Proposal Pursuant to Decision 18-05-041* (November 15, 2018)). As described on p. 4., these funding shares were based on 2018 EE Potential and Goals Study Goals and portfolio budgets adopted in D.18-05-041. Available at: GAS_4009-G-A.pdf (pge.com).

PACIFIC GAS AND ELECTRIC COMPANY

CHAPTER 3

ATTACHMENT A

SUMMARY LIST OF POLICY CHANGES

Exhibit 1, Chapter 3, Attachment A: Summary List of Policy Changes

In this attachment, PG&E respectfully offers suggested language for how its policy proposals described in Exhibit 1, Chapter 3 may be integrated into future Commission decisions, should the Commission decide to make these changes. Where fitting, PG&E suggests potential wording of findings of fact, conclusions of law, and ordering paragraphs.

Policy Changes to Enable EE Portfolios of the Future

1. **Value and Report Location- or Intervention-Specific Energy System Benefits**
    - *Suggested order:*
        - The calculation of Total System Benefit (TSB) shall include both (1) avoided costs incorporated into the Avoided Cost Calculator (ACC), and (2) other applicable avoided costs that are adopted by the Integrated Distributed Energy Resources (IDER) proceeding (R.14-10-003)—or its successor—outside of the ACC.
    - For a discussion of this issue, see ***Exhibit 1, Chapter 3, B.1***.
2. **Update Integrated Demand Side Management (IDSM) Rules to Support Comprehensive Load Management and Enable Greater Program Integration**
    - *Suggested order:*
        - Program administrators[1] may file Tier 2 or Tier 3 advice letters in the EE proceeding proposing new IDSM programs. The advice letter tier shall be determined in accordance with General Order 96-B, Industry Rule 5. These programs may integrate interventions including, but not limited to: energy efficiency, demand response, distributed generation, managed electric vehicle charging, and time varying or dynamic pricing. These programs may integrate funding

[1] In Exhibit 1, Chapter 3 and throughout its testimony, PG&E uses the term “portfolio administrator”, rather than “program administrator”, to refer to those administering portfolios of EE programs primarily implemented by third parties. However, PG&E uses the term “program administrator” in this attachment in order to align with conventional Commission language.

from multiple Commission proceedings, and may have benefits that accrue across multiple proceedings.

- For a discussion of this issue, see ***Exhibit 1, Chapter 3, B.2***.

3. **Realize the Full Potential of Meter-Based Methods for Industrial Process and Non-Building Projects**
   - *Suggested findings:*
     - Ratepayer-funded industrial Strategic Energy Management (SEM) programs in California served their first cohort between 2018 and 2020.[2]
     - The 2018-19 Industrial SEM Impact Evaluation found high realization rates and 1.0 or near-1.0 net-to-gross ratios.
     - Normalized metered energy consumption (NMEC, as defined in the CPUC's NMEC Rulebook, version 2.0[3]) can be used to calculate ex ante savings and/or Total System Benefit (TSB) of energy efficiency projects and programs, compared to a baseline of existing conditions.
     - NMEC can be used to calculate ex ante savings and/or TSB of energy efficiency operations & maintenance (O&M) and/or behavioral, retrocommissioning, and operations (BRO) interventions and activities.
     - Because it uses metered energy consumption data from participating sites both before and after energy efficiency project or measure implementation, site-level NMEC may be the most appropriate method by which to calculate the savings and/or TSB impacts of O&M or BRO activities on large, distinctive sites or operations.

[2] SBW Consulting, Inc. *2018-19 Industrial Strategic Energy Management (SEM) Impact Evaluation*, January 31, 2022, p. 15, Table 6. Available at: https://pda.energydataweb.com/api/view/2582/GroupD-SEM 2018-19 Impact Evaluation PDF Final.pdf

[3] California Public Utilities Commission, *Rulebook for Programs and Projects Based on Normalized Metered Energy Consumption*, version 2.0, January 7, 2020. (CPUC NMEC Rulebook). Last accessed January 8, 2022 at: https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/n/6442463694-nmec-rulebook2-0.pdf

- California's building energy efficiency standards include within scope outdoor lighting in building-attached functional areas, parking areas and other hardscape.[4]

- *Suggested conclusions:*
  - Because the initial two-year period of SEM program engagement has concluded, it is logical to reevaluate limitations on NMEC programs and projects intended to apply during the duration of that period.
  - Because SEM programs have matured beyond their initial cohort and have undergone ex post impact evaluation, it is logical to evaluate whether to permit or encourage their expansion.
  - Permitting SEM programs that follow the SEM Design Guide to "count" as third party would enable the expansion of best practices detailed in this guide.
  - Across all sectors, projects and program approaches that use O&M or BRO interventions and activities should have their baselines set based on existing conditions, when NMEC methods are used to assess ex ante savings or TSB in comparison to existing conditions. This includes process-oriented industrial sector projects and programs that are not part of a Strategic Energy Management program.
  - It is logical to extend the applicability of NMEC to building-attached or adjacent projects, such as outdoor lights subject to Title 24, part 6.
- *Suggested orders:*
  - IOUs may "count" otherwise-qualifying third party programs that that follow the SEM Design Guide toward their third party outsourcing targets.
  - Across all sectors, projects and program approaches that use O&M or BRO interventions and activities shall have their baselines

[4] Title 24, Part 6, and Associated Administrative Regulations. See, for example, Sec. 130.0(b)(2) and Section 140.7. Available at: 2019 Building Energy Efficiency Standards (ca.gov)

set based on existing conditions when NMEC methods are used to assess ex ante savings or TSB in comparison to existing conditions. This includes process-oriented industrial sector projects and programs that are not part of Commission-defined Strategic Energy Management programs. Projects will remain subject to applicable Commission ex ante review processes.

- NMEC methods may be used to assess ex ante savings or TSB of otherwise qualifying building-attached or adjacent projects or measures. For the purposes of assessing whether or not these projects qualify for the use of NMEC methods, building-attached or adjacent measures shall be considered part of an "existing building."
- Energy Division staff shall update the Commission's Rulebook for Programs and Projects Based on NMEC to reflect the above orders, including clarifying the applicability of NMEC and existing conditions baseline to process-oriented industrial and agricultural sector projects, including those outside of Commission-defined Strategic Energy Management programs.

- For further discussion of these issues, see ***Exhibit 1, Chapter 3, B.3*.**

4. Bolster and Improve Critical Tools for TSB Tracking and Portfolio Transparency

- *Suggested orders:*
  - Energy Division staff shall ensure adequate funding for the California Energy Data Reporting System (CEDARS) and the EE Cost-Effectiveness Tool (CET).
  - Energy Division staff shall work with the EE program administrators to develop a stakeholder governance committee for CEDARS and the CET. The governance committee shall comprise staff of energy efficiency program administrators and Energy Division staff. The governance committee shall: (1) discuss the relative priority of proposed improvements and updates to CEDARS and the CET; (2) determine the schedule and budget for

updates to CEDARS and the CET; (3) solicit and review input from other stakeholders on potential improvements and updates to CEDARS and the CET; and (4) inform other stakeholders of plans for CEDARS and CET development.

- For a discussion of this issue, see ***Exhibit 1, Chapter 3, B.4*.**

5. Expand the Range of Options for Procurement Approaches

- *Suggested findings:*
  - Several procurement options, including one- and two-stage solicitations and the "market access" procurement model may be useful for procuring EE programs. Each approach has different strengths and use cases.
  - Two-stage solicitations are effective for managing high volumes of proposal submittals, while single-stage solicitations are comparatively streamlined and offer versatility. A "market access" approach may create opportunities for smaller providers.
  - As IOUs' EE portfolios move into a majority third-party outsourced state, they may have a reduced need for large-scale, multi-sector solicitations, and an increased need to run targeted, smaller-scale solicitations with rapid turnaround.
  - Technology-neutral all-source solicitations may be useful for procuring EE programs and other DERs, and would allow comparisons between complex and dissimilar program proposals.
- *Suggested conclusions:*
  - EE program administrators should be permitted to use one- and two-stage solicitations, and run "market access" style procurements.
  - Two-stage solicitations should no longer be the predominant approach for majority-outsourced EE portfolios.
  - EE program administrators should be permitted to run all-source solicitations.
- *Suggested order:*

- EE program administrators may use one- or two-stage solicitations, and may run "market access" style procurements.

- For a discussion of this issue, see ***Exhibit 1, Chapter 3, B.5.***

Policy Changes to Address Portfolio Administration Issues

1. **Treat Future Approved Program Administrator Budgets as Incremental to IOUs' Application Budget Caps**
   - *Suggested language:*
     - When new program administrators receive Commission approval to administer EE programs outside of the 4-year application cycle established in D.21-05-031, their funding requests shall be considered incremental to IOUs' current 8-year application budget caps.
   - For a discussion of this issue, see ***Exhibit 1, Chapter 3, C.1***.
2. **Align Portfolio Planning Timelines for All Program Administrators**
   - *Suggested orders:*
     - Parties requesting to become EE program administrators—either by bringing a motion to form a new REN or through the application or CCA elect-to-administer process—must align their filings with existing program administrators' applications, true-up advice letters, or mid-cycle advice letters. To "align their filings" means either to file on the due date for existing program administrators' applications or advice letters, or to file within a reasonable time period after the due date for existing program administrators' applications or advice letters.
     - We delegate to Energy Division staff authority to define a "reasonable time period" after the due date for existing program administrators' applications or advice letters in which parties requesting to become new EE program administrators may make their filings.
   - For a discussion of this issue, as well discussion of an alternative proposal, see ***Exhibit 1, Chapter 3, C.2***.

3. **Require Joint Cooperation Memoranda for All Program Administrators**
    - *Suggested order:*
        - All program administrators, including RENs, CCAs who apply to administer EE programs, and CCAs who elect to administer EE programs, shall continue to prepare and submit Joint Cooperation Memoranda (JCMs), according to the existing requirements for the content and timing of JCMs.
    - For a discussion of this issue, see ***Exhibit 1, Chapter 3, C.3***.
4. **Simplify the Process for Regulatory Filings that Request Cost Recovery**
    - *Suggested order*:
        - In applications, advice letters, and other filings in which Investor Owned Utility (IOU) program administrators request cost recovery on behalf of Regional Energy Networks, Community Choice Aggregators, or other program administrators, IOUs shall submit all required elements of the filing by the filing submission deadline, with the exception of territory-level budget and TSB totals or rate impacts. IOUs shall separately submit territory-level totals and/or rate impacts that reflect the combined final budgets and TSB forecasts from all program administrators on behalf of whom they are requesting cost recovery. This separate submission shall be considered supplemental to the filing, and shall be submitted 10 business days after the filing submission deadline for the original filing.
    - For a discussion of this issue, see ***Exhibit 1, Chapter 3, C.4***.
5. **Clarify the Timing of Custom Claims and NMEC True-up Claims**
    - *Suggested findings:*
        - *Energy Division Staff Guidance: NMEC Reporting* (NMEC Reporting Guidance) describes the two-stage process by which ex ante claims for measures and projects that use NMEC methods to calculate savings and/or TSB are reported.
            - *Note:* PG&E respectfully suggests that, after Energy Division staff have the opportunity to update this guidance

to reflect any changes made after April 2020, the NMEC reporting guidance be incorporated into or attached to a future updated version of the CPUC's NMEC Rulebook.

- Although program administrators report "estimated" claims for NMEC programs and projects prior to the completion of M&V, claims for NMEC programs and projects are considered final only after they have been trued up to post-M&V values.

- *Suggested orders:*
  - Program administrators shall report final ex ante savings and/or TSB claims for custom/calculated measures and projects only after all M&V tasks are completed, as determined by the program administrator.
    - For custom projects, installation date shall be determined by project finalization date, defined as the date when energy efficiency measures are installed and commissioned, and all M&V tasks are completed, as determined by the program administrator.
    - For custom projects selected for CPUC ex ante review, installation date shall be determined by project finalization date, determined after completion of the CPUC review and approval of ex ante values, and determined by the program administrator upon completion of all M&V tasks.
    - M&V tasks may include, but are not limited to, collection and approval of invoices or other measure cost data, collection of all required forms such as contractor license verification, and verification that approved savings and other values are properly entered in the program administrator's savings and/or TSB calculations.
  - Program administrators shall report final ex ante savings and/or TSB claims calculated using normalized metered energy consumption (NMEC) only after all M&V tasks are completed, as determined by the program administrator.

- For a discussion of these issues, see ***Exhibit 1, Chapter 3, C.5***.

6. Develop a Process to Regularly Update EE Statewide Funding Percentages

- *Suggested orders*:
  - Energy Division staff shall work with IOU staff to update IOU funding share contribution percentages to be used in IOUs' 2023 True Up Advice Letters.
  - Energy Division staff shall work with IOU staff to develop a process to regularly update IOU funding share contribution percentages for EE statewide programs.
- For a discussion of this issue, see ***Exhibit 1, Chapter 3, C.6***.

PACIFIC GAS AND ELECTRIC COMPANY

APPENDIX A

STATEMENTS OF QUALIFICATIONS

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF ROBERT W. BOHN

Q 1 Please state your name and business address.

A 1 My name is Robert W. Bohn, and am currently working remotely as Pacific Gas and Electric Company (PG&E) transitions from its prior location at 77 Beale Street, San Francisco, California to 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am a Principal Portfolio Manager on the Energy Efficiency (EE) Portfolio Strategy and Optimization team. I am the optimization lead for PG&E's EE portfolio. My functional responsibilities include leading PG&E's EE portfolio forecasting efforts for regulatory filings and advising PG&E EE leadership on portfolio performance using EE program and portfolio data. I conduct EE measure and program benefit-cost analyses and help the PG&E EE team better understand the cost effectiveness of EE interventions. I also analyze EE market and policy changes which impact PG&E's EE portfolio.

Q 3 Please summarize your educational and professional background.

A 3 I received a Bachelor of Science in mechanical engineering from University of California, Los Angeles in 2008. After graduating, I received a commission in the United States Marine Corps and served on active duty until 2015. I attended the University of California, Davis Graduate School of Management and received a Master of Business Administration in 2017. Upon graduation, I joined PG&E as a product manager on the Energy Efficiency Product Management team. In 2019, I transitioned to my current role as a portfolio manager on the newly formed Portfolio Strategy and Optimization team.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony and workpapers in support of PG&E's Energy Efficiency 2024 Business-Portfolio Plan Application:

- Exhibit 2, "PG&E Energy Efficiency 2024-2027 Portfolio Plan":
  - Chapter 2, "Forecast Methodology";
  - Chapter 2, Attachment A, "PG&E Energy Efficiency 2024-2027 Program-Level Annual Cost Variance Explanations."

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF BEN BROWN

Q 1 Please state your name and business address.

A 1 My name is Ben Brown, and am currently working remotely as Pacific Gas and Electric Company (PG&E) transitions from its prior location at 77 Beale Street, San Francisco, California to 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am a Principal Strategic Analyst on the Energy Efficiency Portfolio Strategy and Optimization team. I am the portfolio strategy development lead for PG&E's Energy Efficiency portfolio. My functional responsibilities include developing and supporting energy efficiency portfolio strategic plans in alignment with regulatory requirements and internal priorities as well as contributing to California Public Utilities Commission filings within the energy efficiency proceeding as well as other proceedings involving energy efficiency coordination.

Q 3 Please summarize your educational and professional background.

A 3 I have held various program management and business analyst positions of increasing responsibility within PG&E's Energy Efficiency Portfolio since 2016. Prior to 2016, I held an employment tax analyst position at PG&E. I hold Bachelor of Arts degrees in Political Science and Rhetoric from the University of California, Berkeley.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in support of PG&E's Energy Efficiency 2024 Business-Portfolio Plan Application:

- Exhibit 2, "PG&E Energy Efficiency 2024-2027 Portfolio Plan":
  - Chapter 3, "Segmentation Strategy";
  - Chapter 3, Attachment A, "Program Level and Segment Level Metrics and Targets."

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF MICHAEL D. BURGER

Q 1 Please state your name and business address.

A 1 My name is Michael D. Burger, and am currently working remotely as Pacific Gas and Electric Company (PG&E) transitions from its prior location at 77 Beale Street, San Francisco, California to 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am the senior manager over the Energy Efficiency Portfolio Strategy and Program Oversight group within the Customer Energy Solutions Department. I am responsible for strategy, optimization, delivery and oversight of PG&E's Energy Efficiency programs across residential and non-residential sectors, including Codes and Standards and Local Government Partnerships.

Q 3 Please summarize your educational and professional background.

A 3 I received a Bachelor of Arts degree in business administration from Niagara University in 2004. Before joining PG&E in 2006, I worked for PricewaterhouseCoopers in the Assurance and Business Advisory group. Since joining PG&E in 2006, I have held a variety of positions with increasing responsibility. I was a business finance analyst supporting Power Generation; senior business finance analyst supporting Risk and Regulatory Relations; supervisor/acting manager-business finance supporting Integrated Demand Side Management; manager of the Portfolio Data and Analysis group within Integrated Demand Side Management; manager of the Financial Reporting and Governance team within Customer Energy Solutions.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in in support of PG&E's Energy Efficiency 2024 Strategic Business and Portfolio Plan Application:

- Exhibit 1, "PG&E Energy Efficiency 2024-2031 Strategic Business Plan":
  - Chapter 2, "Annual Portfolio Budgets for 2024-2031."

- Exhibit 2, “PG&E Energy Efficiency 2024-2027 Portfolio Plan”:
  - Chapter 4, “Sector Strategy”;
  - Chapter 4, Attachments A through J; and
  - Chapter 5, “Portfolio Management.”
- Exhibit 3, “PG&E’s Responses, Pursuant to Energy Division Template”:
  - Chapter 1, “PG&E’s Energy Efficiency 2024-2031 Application Tables, Pursuant to Energy Division Template”; and
  - Chapter 2, “PG&E’s Energy Efficiency 2024-2027 Supplemental Budget Narrative Information, Pursuant to Energy Division Template.”

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF CAROLINE MASSAD FRANCIS

Q 1 Please state your name and business address.

A 1 My name is Caroline Massad Francis, and am currently working remotely as Pacific Gas and Electric Company (PG&E) transitions from its prior location at 77 Beale Street, San Francisco, California to 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am manager of the Energy Efficiency (EE) Policy Shaping, Analysis and Compliance Team within the Customer Energy Solutions Department. I oversee analysts who focus on policy and compliance matters, data reporting, and Evaluation, Measurement and Verification (EM&V) for PG&E's EE programs.

Q 3 Please summarize your educational and professional background.

A 3 I received a Bachelor of Arts degree in sociology from Yale University in 2005 and a Master of Public Policy degree from the University of Michigan in 2012. Prior to joining PG&E, my experience included working as a research analyst at Mathematica Policy Research, a public policy and economic consulting firm, from 2012 to 2016. Since joining PG&E in 2016, I have held a variety of positions with increasing responsibility. I was a Senior Analyst with the EE EM&V team; acting supervisor of the Customer Programs Measurement and Evaluation team, which provides evaluation support to customer programs outside of EE; and supervisor over the EE reporting and ex ante policy staff on my current team. I have held my current position since January 2021 (acting between January and October 2021 and permanently since October 2021).

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in support of PG&E's Energy Efficiency 2024 Business-Portfolio Plan Application:

- Exhibit 1, "PG&E Energy Efficiency 2024-2031 Strategic Business Plan":
  - Chapter 3, "Recommendations For New or Modified Energy Efficiency Policies"; and

- Chapter 3, Attachment A, “Summary List of Policy Changes.”

- Exhibit 2, “PG&E Energy Efficiency 2024-2027 Portfolio Plan”:
  - Chapter 6, “Evaluation, Measurement and Verification.”

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF REBECCA MADSEN

Q 1 Please state your name and business address.

A 1 My name is Rebecca Madsen, and am currently working remotely as Pacific Gas and Electric Company (PG&E) transitions from its prior location at 77 Beale Street, San Francisco, California to 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am an Expert Regulatory Analysis and Forecasting Analyst in PG&E's Energy Accounting Department, within the Controller's organization. In this position, I am responsible for ensuring the recovery of the costs included in cases from customers. I advise on emerging regulatory issues, act as a cost recovery witness for cases, and implement cost recovery requirements in California Public Utilities Commission (CPUC) decisions. I am also responsible for process improvements and documentation of existing processes.

Q 3 Please summarize your educational and professional background.

A 3 I earned a Bachelor of Arts degree in Archaeology from the George Washington University and an Associate in Science degree in Accounting from Skyline College. I have been a registered Certified Public Accountant in California (License 118069) since 2013.

I have been with PG&E since 2015. During that time, I have worked within the Energy Accounting Department of the Controller's organization, where I was responsible for performing month end close activities, including recording journal entries, reconciling accounts, and performing variance analysis, related mainly to Public Purpose Programs. I was also responsible for reading and interpreting decisions and resolutions issued by the CPUC, understanding the accounting impacts, and recording the related journal entries and preparing the supporting documentation.

My current assignment is described in A 2.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in support of PG&E's Energy Efficiency 2024 Business-Portfolio Plan Application:

- Exhibit 2, "PG&E Energy Efficiency 2024-2027 Portfolio Plan":
  - Chapter 7, "Cost and Cost Recovery."

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF DAVID POSTER

Q 1 Please state your name and business address.

A 1 My name is David Poster, and am currently working remotely as Pacific Gas and Electric Company (PG&E) transitions from its prior location at 77 Beale Street, San Francisco, California to 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am the Director of the Energy Efficiency (EE) organization at PG&E overseeing the company's portfolio of EE solutions aimed at helping customers eliminate unnecessary energy use and supporting California in achieving a cleaner and more reliable energy future.

Q 3 Please summarize your educational and professional background.

A 3 Prior to my current role, I held several other important roles within PG&E including Senior Manager of EE Operations, Manager of Residential Programs and Manager of Policy and Strategy. I hold a Bachelor's degree in Economics from the University of Puget Sound.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in support of PG&E's Energy Efficiency 2024 Business-Portfolio Plan Application:

- Exhibit 1, "PG&E Energy Efficiency 2024-2031 Strategic Business Plan":
  - Chapter 1, "PG&E's Vision for Energy Efficiency in California: 2024-2031."
- Exhibit 2, "PG&E Energy Efficiency 2024-2027 Portfolio Plan":
  - Chapter 1, "Portfolio Summary."

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.