

Company: San Diego Gas & Electric Company (U 902 E)
Proceeding: Real Time Pricing Pilot Rate
Application: A.21-12-006/A.21-12-008
Exhibit: SDG&E-XX

PREPARED SUPPLEMENTAL DIRECT TESTIMONY OF
JEFF DeTURI (CHAPTER 1)
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

August 15, 2022



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1 **PREPARED SUPPLEMENTAL DIRECT TESTIMONY OF**

2 **JEFF DeTURI (CHAPTER 1)**

3 **I. OVERVIEW AND PURPOSE**

4 The purpose of this testimony is to provide an overview of the background and policy
5 drivers behind San Diego Gas & Electric Company’s (SDG&E) application, including the
6 regulatory background, involvement of stakeholders in workshops prior to filing this application
7 and the policy objectives achieved by SDG&E’s proposed rate design. Due to the unique
8 procedural history in this proceeding, as described further below, SDG&E is submitting this
9 prepared supplemental direct testimony to address revisions to SDG&E’s consolidated Real
10 Time Pricing Pilot Application and Commercial Electric Vehicle Dynamic Rate Application
11 (A.21-12-006 et al.), including recommendations by Energy Division. Because the revisions are
12 extensive and include both adding new testimony and removing previously served testimony,
13 SDG&E is withdrawing previously served testimony and will rely solely on this prepared
14 supplemental direct testimony as its direct testimony in this proceeding.

15 My testimony is organized as follows:

- 16 • **Section I – Overview and Purpose**
- 17 • **Section II – Regulatory Background**
- 18 • **Section III – RTP in Other Jurisdictions**
- 19 • **Section IV – Stakeholder Engagement**
- 20 • **Section V – Objectives and Desired Outcomes**
- 21 • **Section VI – CAISO Day Ahead Energy Price**
- 22 • **Section VII – Alignment to Objectives and Desired Outcomes**
- 23 • **Section VIII – Environmental and Social Justice Action Plan**

- 1 • **Section IX – Rate Design Principles**
- 2 • **Section X – Timing Considerations**
- 3 • **Section XI – Safety Concerns**
- 4 • **Section XII – Summary and Conclusion**
- 5 • **Section XIII – Statement of Qualifications**

6 **II. REGULATORY BACKGROUND**

7 On July 15, 2021, the California Public Utilities Commission (CPUC or Commission)
8 issued Decision (D.) 21-07-010 in SDG&E’s 2019 General Rate Case Phase 2 (GRC Phase 2
9 Decision).¹ The GRC Phase 2 Decision directs SDG&E to file a separate application to develop
10 and implement a two-stage, real-time pricing pilot (RTP Pilot), with the following requirements:
11 RTP Pilot Stage 1 will have limited enrollment and a target implementation date no later than the
12 end of 2022; RTP Pilot Stage 2 would begin after RTP Pilot Stage 1 and have a larger enrollment
13 size; a proposal for tracking and recovery of costs, including tracking and mitigating under and
14 overcollections; a proposal to address the feasibility and barriers of an application programming
15 interface; a proposed evaluation plan; and a proposed process for working groups.² The purpose
16 of the RTP Pilot is to gather the data and experience necessary for the design of potential future
17 RTP rates, and to identify any barriers and implementation challenges to any such rates.³ On

¹ See, A.19-03-002, *Administrative Law Judge’s Ruling Consolidating Proceedings, and Confirming Preliminary Categorization and Assignment of Consolidated Proceeding* (June, 24, 2019) at 2, (“this ruling consolidates A.10-07-009 with A.19-03-002 for purposes of considering related questions of law or fact.”).

² D.21-07-010 at 52-58, Ordering Paragraph (OP) 6 at 89-90.

³ *Id.* at 52-53.

1 December 13, 2021, pursuant to the GRC Phase 2 Decision, SDG&E filed its Application for
2 Approval of Real Time Pricing Pilot Rate.⁴

3 Pursuant to the Scoping Memo and Ruling issued on April 18, 2022, Assigned
4 Commissioner Shiroma consolidated SDG&E’s application for a real time pricing pilot rate and
5 SDG&E’s application for a commercial electric vehicle dynamic rate.⁵ Additionally, the
6 Scoping Memo and Ruling identified a date on which the CPUC Energy Division (ED) Staff
7 would provide recommendations for SDG&E to modify its proposed rates (late May 2022) and a
8 date on which SDG&E would serve supplemental testimony in response to those
9 recommendations (June 30, 2022).⁶ On May 31, 2022, Administrative Law Judge (ALJ) Wang,
10 issued a ruling adjusting the schedule and extending the dates for the ED staff recommendations
11 and subsequent supplemental testimony.⁷ Pursuant to the ALJ’s May 31 Ruling, ED filed their
12 recommendations on June 15, 2022, and a remote staff workshop was held on June 24, 2022 to
13 discuss the recommendations. On June 28, 2022, SDG&E requested an extension until August
14 15, 2022, for serving its supplemental testimony in response to the ED staff recommendations.
15 On July 12, 2022, ALJ Wang granted SDG&E’s request for an extension and attached a revised
16 version of the ED staff recommendations (ED Staff Recommendations).⁸ The ED Staff
17 Recommendations made significant recommended changes to the eligibility, timing, and size of

⁴ A.21-12-006, *Application of San Diego Gas & Electric Company (U 902 E) for Approval of Real Time Pricing Pilot Rate* (December 13, 2021).

⁵ A.21-12-006, *et al.*, *Assigned Commissioner’s Scoping Memo and Ruling* (April 18, 2022) (Scoping Memo and Ruling) at 3, (consolidating A.21-12-006 with A.21-12-008).

⁶ *Id.* at 6

⁷ A.21-12-006, *Administrative Law Judge’s Ruling Addressing Motion of the Public Advocates Office and Schedule* (May 31, 2022) at 3.

⁸ A.21-12-006, *et al.*, *Administrative Law Judge’s Ruling Addressing Motion of San Diego Gas & Electric Company and Workshop Comments* (July 12, 2022).

1 the RTP Pilots and the proposed vehicle-to-grid export rate. ED’s Staff Recommendations
2 proposed that SDG&E expand the eligibility of the proposed vehicle-to-grid export rate beyond
3 customers for separately metered EV charging outside of single-family homes taking distribution
4 service on Schedule EV-HP (*e.g.*, commercial EVs). Because energy exports from EVs and
5 other customers can support grid reliability, SDG&E supports this recommendation for the
6 Export Compensation Pilot Stage 2. This revised testimony refers to the previously proposed
7 V2G-Export rate design as the Export Compensation Pilot.

8 California and the Commission are leaders in evaluating and implementing programs to
9 help fight against climate change. The proposed Dynamic Pricing Pilots are aligned and comply
10 with the Distributed Energy Resource (DER) Action Plan’s vision to create dynamic rate options
11 that promote load flexibility.⁹ Senate Bill (SB) 100 set a goal to reach 100% zero-carbon energy
12 by 2045. Further, the Commission’s Building Decarbonization Proceeding, Rulemaking (R.) 19-
13 01-011, is working to meet the State’s building decarbonization goals pursuant to Assembly Bill
14 3232. One of the ways to meet these goals is to introduce demand side tools, such as RTP rates,
15 to provide customers with incentives to manage their loads to reduce their electricity bills while
16 also encouraging the reduction of greenhouse gases (GHG) and ensuring the reliability of
17 SDG&E’s electricity grid. As ED staff stated in their recent white paper, “A dynamic rate
18 structure that is updated based both on the variability of renewable resources (both seasonal and
19 diurnal) and the real-time constraints of the electric system can encourage load shift that reduces

⁹ CPUC, Distributed Energy Action Plan Aligning Vision and Action 2.0 (April 21, 2022) at 8, Vision Element 1A, available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M467/K470/467470758.PDF>.

1 long-term system costs and provides reliability benefits to the grid.”¹⁰ SDG&E supports the
2 Commission’s goal of introducing dynamic pricing rates like RTP rates that can provide
3 customers with the tools to meet these goals.

4 Because it is important to properly evaluate the effectiveness and customer acceptance of
5 RTP and export compensation pilot rates (collectively, the Dynamic Pricing Pilots), SDG&E is
6 proposing 2-stage pilots for the Dynamic Pricing Pilots. For the Dynamic Pricing Pilots,
7 SDG&E is proposing to utilize hourly day ahead California Independent System Operator
8 (CAISO) pricing. Additionally, for both Pilots, SDG&E proposes smaller maximum enrollment
9 in Pilot Stage 1 with a larger maximum enrollment in Pilot Stage 2 once the data and experience
10 from Pilot Stage 1 can be fully evaluated.

11 Stage 1 of the Export Compensation Pilot will only be open to Commercial & Industrial
12 (C&I) EV customers who are on the EV-HP rate. Limiting the Export Compensation Pilot Stage
13 1 to C&I EV customers on EV-HP is designed to keep implementation costs down while still
14 being able to offer the new rate to customers who are well positioned (i.e., have energy that can
15 be exported to the grid) to participate in a dynamic pricing rate.

16 RTP Pilot Stage 1 will be limited to seven time-of-use (TOU) rate schedules, which
17 represents over half of all TOU eligible customers. Limiting the RTP Pilot Stage 1 to only
18 seven TOU schedules is designed to help minimize the costs of the RTP Pilot and associated rate
19 pressure while still allowing the majority of eligible TOU customers the option to participate in
20 the pilot.

¹⁰ CPUC, Advanced Strategies for Demand Flexibility Management and Customer DER Compensation, Energy Division White Paper and Staff Proposal (June 22, 2022) (ED White Paper) at 30, available at <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/demand-response/demand-response-workshops/advanced-der---demand-flexibility-management/ed-white-paper---advanced-strategies-for-demand-flexibility-management.pdf>.

1 Limiting the Dynamic Pricing Pilots Stage 1 to a smaller subset of customers will help
2 reduce the amount of implementation costs to the billing system. For instance, there are costs
3 associated with quality control (QC) testing for each rate schedule and reducing the number of
4 eligible rate schedules reduces costs associated with that QC testing. Limiting the rate schedules
5 also minimizes the costs to the communication tool.

6 SDG&E proposes that Stage 2 of the RTP Pilot, will be open to all customer classes,
7 except street lighting and anticipates a similar expansion for Stage 2 of the Export Compensation
8 Pilot. Stage 2 of the Dynamic Pricing Pilots will be adjusted based on the results and feedback
9 from the Stage 1 Pilots and working groups, but SDG&E anticipates utilizing the same rate
10 design with expanded eligibility to include all customers on TOU rate schedules as
11 recommended in the ED staff proposal. This is subject to change based on the results that
12 SDG&E receives from the Working Group and the evaluation of the first year of the Stage 1
13 Pilots.

14 Pursuant to the GRC Phase 2 Decision at Section 5.5, SDG&E will address the following
15 sixteen items in this Application:

- 16 1) What market price or other indicators should the RTP be based on? Is a 15-minute
17 real-time price or day-ahead hourly price recommended? What information and
18 data supports the recommendation?¹¹

19 SDG&E response: This is addressed further below in Section VI.

- 20 2) How should a capacity adder to recover stranded costs be structured? Consider the
21 following methods: (1) three to four different peak TOU prices, (2) an hourly
22 capacity adder, (3) a different option (specify). Examples of both (1) and (2) are
23 presented in JARP's proposal. For example, a four-hour peak TOU price capacity
24 adder could have different adders for different weather conditions: base, slightly
25 hot, moderate hot, or extremely hot. The capacity adder design should be offset by
26 a credit on volumetric rates (for residential customers) or reduction in demand
27 charges (for commercial/industrial customers) to ensure revenue neutrality.

¹¹ D.21-07-010 at 54-55.

1 Response can include a proposal for an iterative capacity adder design with a
2 simple design for the Pilot Stage 1 that will help to inform the design of the
3 capacity adder in the Pilot Stage 2.¹²

4 SDG&E response: This is addressed in the prepared supplemental direct testimony of
5 SDG&E witness William G. Saxe at Chapter 3, Rate Design, Section II.B.

- 6 3) Participation target and cap for Pilot Stage 1 will likely be significantly smaller
7 than 35,000. The Pilot Stage 2 is expected to be similar in size to the PD Pilot.
8 The application should propose a minimum target number of participants for each
9 class and a cap, for both stages of the pilot.¹³

10 SDG&E response: This is addressed in the prepared supplemental direct testimony of
11 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.C. and Attachment B.

- 12 4) Eligibility for both stages should avoid double-counting. This issue was addressed
13 in the proposed decision. For both stages of the pilot, the presumption is that
14 double-counting will be prevented by prohibiting customers enrolled in the RTP-
15 based dynamic rate from dual-participating in another market-integrated, supply-
16 side demand response program.¹⁴

17 SDG&E response: This is addressed in the prepared supplemental direct testimony of
18 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.B.

- 19 5) Estimated implementation costs for both pilot stages should be included in the
20 application. These costs include meter reprogramming (to allow for 15-minute or
21 day-ahead hourly prices and usage to be recorded), billing and IT system
22 upgrades, ME&O, and price portal and push notifications. The application should
23 be detailed and supported as to the estimated Pilot Stage 1 costs. The estimated
24 Pilot Stage 2 costs may be further refined during the proceeding. The application
25 should include a proposal for tracking and recovery of Pilot Stage 2 costs through
26 a memorandum or balancing account.¹⁵

27 SDG&E response: This is addressed in the prepared supplemental direct testimony of
28 SDG&E witness Ray Utama at Chapter 4, Implementation, Section III.

¹² *Id.* at 55.

¹³ *Id.* (sample table excluded).

¹⁴ *Id.* at 56.

¹⁵ *Id.*

- 1 6) The application should include a proposal for allocation of costs to ratepayers.
2 The application should include a proposal for determining any undercollection or
3 overcollection resulting from the Pilot Stage 2 as well as mechanisms for
4 mitigating the risk of undercollection and overcollection. For Pilot Stage 1,
5 SDG&E should propose a treatment that appropriate to size and implementation
6 deadline for the Pilot Stage 1.¹⁶

7 SDG&E response: The allocation of costs to ratepayers is addressed in the prepared
8 supplemental direct testimony of SDG&E witness Eric Dalton at Chapter 7, Cost Recovery,
9 Section II. The Pilot Stage 2 determination of undercollection and overcollection is addressed in
10 the prepared supplemental direct testimony of SDG&E witness Leslie Willoughby at Chapter 6,
11 Measurement and Evaluation, Sections II and III by tracking the bill impacts to customers on the
12 RTP Pilot.

- 13 7) SDG&E may hire a consultant to assist in obtaining stakeholder input prior to
14 filing of the application, and to facilitate working group meetings and evaluation
15 of Pilot Stage 1. Up to \$150,000 may be recovered for consultant and facilitation
16 costs that are incremental, documented, reasonable, and related to this work. The
17 costs may be tracked and recovered through SDG&E's existing Residential Rate
18 Reform Memorandum Account. The application should include a proposal for
19 structure and funding of any additional consulting or other work necessary to
20 complete both stages of the pilot.¹⁷

21 SDG&E response: This is addressed in the prepared supplemental direct testimony of
22 SDG&E witness Eric Dalton at Chapter 7, Cost Recovery, Section I and SDG&E witness Ray
23 Utama Chapter 4, Implementation, Section III.

- 24 8) The application should address the feasibility of and the barriers for an application
25 programming interface (API) to transmit price signals to dynamic rate customers
26 participating in Pilot Stage 2.¹⁸

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.* at 57.

1 SDG&E response: This is addressed in the prepared supplemental direct testimony of
2 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II. E. and III.C.

- 3 9) Third party access to customer meter data is important, but must comply with
4 privacy laws. The application should contain a proposal for access that complies
5 with the law and is consistent with other Commission decisions.¹⁹

6 SDG&E response: This is addressed in the prepared supplemental direct testimony of
7 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II. E.

- 8 10) The application should include other proposed outreach and price notification
9 methods, including text alerts that notify customers of anticipated high (or low)
10 prices, direct load control by way of authorized connected devices based on
11 specific user preferences, push notifications, a website, customized views
12 comparing customers' historic energy usage to the prevailing price of electricity,
13 and education materials outlining personalized load shift options.²⁰

14 SDG&E response: This is addressed in the prepared supplemental direct testimony of
15 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.E. and III.C.

- 16 11) The application should include a proposal for third parties to be the primary
17 source of ME&O for customers. The application should also include a proposal
18 for continued coordination between SDG&E and third parties.²¹

19 SDG&E response: This is addressed in prepared supplemental direct testimony of
20 SDG&E witness April Bernhardt at Chapter 5, Marketing, Education and Outreach, Section II.6.

- 21 12) The application should include a detailed evaluation plan for Stage 1, and a
22 proposed evaluation plan for Stage 2. Areas of interest that should be considered
23 in the evaluation plans include the items set forth in Section 5.6 below.²²

¹⁹ *Id.*

²⁰ *Id.* (citation omitted).

²¹ *Id.*

²² *Id.*

1 SDG&E response: This is addressed in the prepared supplemental direct testimony of
2 SDG&E witness Leslie Willoughby at Chapter 6, Measurement and Evaluation, Section II for Pilot
3 Stage 1 and Section III for Pilot Stage 2.

- 4 13) The application should include a proposed process for a working group to
5 facilitate development of the Pilot Stage 2, including final design elements and
6 evaluation criteria.²³

7 SDG&E response: This is addressed in the prepared supplemental direct testimony of
8 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.A.

- 9 14) The application should include a proposed timeline and scheduling worksheet
10 (such as a Gantt chart) for both stages of the pilot. The timeline should include a
11 proposed pilot duration.²⁴

12 SDG&E response: This is addressed in the prepared supplemental direct testimony of
13 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.A. and Attachment A.

- 14 15) The application should include information, data, and modeling to show the
15 potential impact of transmission rate time differentiation on the RTP pilot rates.
16 This should include a comparison of the proposed pilot rate design with current
17 transmission rate structure and with time-differentiated transmission rates. This
18 will allow the Commission and other stakeholders to better understand the
19 potential impact of transmission rates.²⁵

20 SDG&E response: This is addressed in the prepared supplemental direct testimony of
21 William G. Saxe at Chapter 3, Rate Design, Section IV.

- 22 16) The application should include a proposed duration for each stage of the pilot. For
23 Pilot Stage 1, the application may also include a proposal for a summertime only
24 RTP pilot.²⁶

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.* at 57-58.

²⁶ *Id.* at 58.

1 SDG&E response: This is addressed in Section X and in the prepared supplemental direct
2 testimony of SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.A. and
3 Attachment A.

4 In addition, SDG&E will address the ED Staff Recommendations below:

- 5 (1) ED Recommendation: In section III of the Staff Recommendations ED
6 recommends that SDG&E offer two opt in rates, an import only rate and
7 an Export Compensation rate.²⁷

8 SDG&E response: As mentioned above in Section II of this testimony SDG&E will be
9 offering both opt in rates as pilots.

- 10 (2) ED Recommendation: In Section III A, ED makes several
11 recommendations regarding rate design.²⁸

12 SDG&E response: SDG&E proposes to base the commodity portion of the Dynamic
13 Pricing Pilot rates on the CAISO Day Ahead hourly price with a critical peak pricing adder based
14 on called events. This is addressed in the prepared supplemental direct testimony of William G.
15 Saxe at Chapter 3, Rate Design, Section II.

- 16 (3) ED Recommendation: In Section III B-C, ED makes several
17 recommendations regarding pilot requirements and eligibility.²⁹

18 SDG&E response: Many of these recommendations were adopted and are addressed in
19 the prepared supplemental direct testimony of SDG&E witness Ray Utama at Chapter 4,
20 Implementation, for example, starting the Export Compensation Pilot and RTP Pilot at the same
21 time, expanding the RTP Pilot to include all customer classes, except street lighting, adopting the
22 minimum and maximum customers, and issuing final evaluation reports. Not all

²⁷ ED Staff Recommendations at 2-3.

²⁸ *Id.* at 3-4.

²⁹ *Id.* at 4-5.

1 recommendations were adopted as written by ED. For instance, SDG&E will create a two-stage
2 pilot for the Export Compensation Pilot instead of the recommended one stage pilot.³⁰ Further,
3 SDG&E will also consider allowing NEM customers to participate in the Export Compensation
4 Pilot Stage 2 as discussed in Section IX. SDG&E does not recommend a minimum enrollment
5 target for customers that are low income (CARE/FERA) and/or in disadvantaged communities as
6 explained further below in Section VIII. SDG&E is making both stages of the Dynamic Pricing
7 Pilots 2 years, instead of the ED recommended 1 year, as explained in Section X. Finally,
8 SDG&E discusses the importance of adhering to the Rule 21 interconnection agreement in
9 Section XI.

10 (4) ED Recommendation: In Section III, D., ED makes several
11 recommendations regarding the tool for communicating hourly pricing to
12 customers for the Dynamic Pricing Pilots.³¹

13 SDG&E response: This is addressed in the prepared supplemental direct testimony of
14 SDG&E witness Ray Utama at Chapter 4, Implementation, Sections II.E. and III.C.

15 (5) ED Recommendation: In Section III, E., ED asks several questions
16 regarding customer protection with regard to the Dynamic Pricing Pilots.³²

17 SDG&E response: SDG&E is proposing an incentive bill credit in lieu of bill protection
18 as discussed further below in Section VII.A. Customers will be able to opt out of any of the
19 pilots at any time as addressed in the prepared supplemental direct testimony of SDG&E witness
20 Ray Utama at Chapter 4, Implementation, Section II.D. Low-income customers and customers
21 in disadvantaged communities will not be treated differently, as discussed in Section VIII.

³⁰ As discussed in Section II at JDT-5 and JDT-6, *supra*.

³¹ ED Staff Recommendations at 5.

³² *Id.* at 5-6.

1 (6) ED Recommendation: In Section III, F., ED reiterates the Commission
2 decision to include the potential impact of time differentiated
3 transmission.³³

4 SDG&E response: This is addressed in the prepared supplemental direct testimony of
5 William G. Saxe at Chapter 3, Rate Design, Section IV.

6 (7) ED Recommendation: In Section III, G., ED reiterates the Commission
7 decision to address issues of dual participation.³⁴

8 SDG&E response: This is addressed in the prepared supplemental direct testimony of
9 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.B.

10 (8) ED Recommendation: In Section III, H., ED asks several questions
11 regarding marketing, education, and outreach (ME&O).³⁵

12 SDG&E response: This is addressed in prepared supplemental direct testimony of
13 SDG&E witness April Bernhardt at Chapter 5, Marketing, Education and Outreach, Section II.

14 (9) ED Recommendation: In Section III, I., ED makes several
15 recommendations regarding measurement and evaluation (M&E).³⁶

16 SDG&E response: This is addressed in the prepared supplemental direct testimony of
17 SDG&E witness Leslie Willoughby at Chapter 6, Measurement and Evaluation, Section II.

18 (10) ED Recommendation: In Section III, J., ED makes several
19 recommendations regarding the implementation plan.³⁷

20 SDG&E response: This is addressed in the prepared supplemental direct testimony of
21 SDG&E witness Ray Utama at Chapter 4, Implementation, Section II.

³³ *Id.* at 6.

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.* at 6-7.

³⁷ *Id.* at 7.

1 (11) ED Recommendation: In Section III, K., ED makes several
2 recommendations regarding the cost tracking and recovery.³⁸

3 SDG&E response: The tracking and recovery of costs is addressed in the prepared
4 supplemental direct testimony of SDG&E witness Eric Dalton at Chapter 7, Cost Recovery,
5 Section II. The breakdown of costs is addressed in the prepared supplemental direct testimony of
6 SDG&E witness Ray Utama at Chapter 4, Implementation, Section III. The determination of
7 undercollection and overcollection is addressed in the prepared supplemental direct testimony of
8 SDG&E witness Leslie Willoughby at Chapter 6, Measurement and Evaluation, Sections II and
9 III.

10 **III. RTP IN OTHER JURISDICTIONS**

11 In developing its RTP pilot design, SDG&E first looked to other utilities, including
12 utilities in other jurisdictions, that have implemented RTP rates. For example, Pacific Gas and
13 Electric Company's (PG&E) Real Time Pricing Pilot was recently approved by the Commission
14 in its bifurcated 2020 General Rate Case Phase II proceeding.³⁹ PG&E's proposal, as described
15 in PG&E's motion to adopt RTP Pilot settlement agreement, is similar to SDG&E's proposal in
16 many respects, including:

- 17 • Available to residential and commercial and industrial customers;
- 18 • Reliance on day-ahead hourly generation prices from the CAISO day-ahead
19 market (DAM) to set the RTP rate;
- 20 • RTP Pilot Stage 1 two year duration;
- 21 • Potential for Under-Collection or Over-Collection of Generation Revenue;
- 22 • Customer Incentives;

³⁸ *Id.*

³⁹ *See generally*, D.22-08-002.

- 1 • Cost Recovery of Implementation Costs;
- 2 • Prohibition on dual participation in the RTP rate pilot and other day ahead load
- 3 management approaches such as Base Interruptible Program and Emergency Load
- 4 Reduction Program; and
- 5 • Maintaining the existing transmission rate design for customers enrolled in the
- 6 RTP rate pilot.⁴⁰

7 Additionally, PG&E's Day-Ahead Hourly Real-Time Pricing (DAHRTP-CEV) pilot rate
8 is available to Commercial Electric Vehicle (CEV) customers.⁴¹ This was chosen to be cost-
9 based and provide customers with a more accurate price signal than a traditional TOU rate.⁴²
10 Each day, PG&E determines the generation prices for each of the 24 hours in the following day
11 based on Day Ahead market prices and forecasted load and generation for each hour.⁴³ The price
12 paid by the customer is composed of three parts: 1) Marginal energy cost derived from the
13 CAISO Day Ahead Market energy price; 2) a flat volumetric adder; and 3) a capacity adder
14 based on hourly generation peak capacity allocation factor method.⁴⁴

15 Southern California Edison Company's (SCE) RTP program is open to all non-residential
16 customers receiving bundled service (delivery and generation of electricity) from SCE.⁴⁵ This
17 program was designed for customer operations with the flexibility to shift or reduce electrical

⁴⁰ See, A.19-11-019, PG&E Supplemental Testimony, 2020 General Rate Case Phase II, Commercial & Industrial Real Time Pricing Pilot and Research for Other Customer Classes (March 29, 2021) (A.19-11-019, Exhibit No. PG&E-RTP-1).

⁴¹ D.21-11-017 at 8.

⁴² *Id.* at 9-10.

⁴³ *Id.* at 8.

⁴⁴ *Id.* at 8.

⁴⁵ SCE, Real-Time Pricing Fact Sheet at 3, available at https://www.sce.com/sites/default/files/inline-files/RTP%20Fact%20Sheet%200918_WCAG_2.pdf.

1 usage during the higher priced hours.⁴⁶ SCE's RTP varies 24 hours a day, seven days a week
2 with hourly rates based on the time of day, season, and temperature.⁴⁷ All with seven different
3 pricing schedules: three during the summer season, two during the winter season, and two which
4 apply on all weekends throughout the year.⁴⁸

5 There are several utilities in other jurisdictions that currently offer RTP rates. For
6 example, Oklahoma Gas & Electric (OG&E) offers an optional rate called SmartHours-Variable
7 Peak Pricing (VPP) that combines elements of TOU and dynamic rates.⁴⁹ On SmartHours-VPP,
8 OG&E residential customers in Arkansas and Oklahoma are charged one off-peak rate during the
9 summer, but one of four different weekday peak period prices.⁵⁰ Similar to SCE's RTP rate, the
10 price schedules are called on a day-ahead basis.⁵¹

11 Ameren Illinois Company (Ameren) and Commonwealth Edison Company (ComEd) in
12 Illinois also offer RTP to residential customers. Ameren's program uses day-ahead hourly prices
13 as the basis of the energy component of its RTP rate,⁵² while ComEd uses the real-time five-

⁴⁶ *Id.* at 3.

⁴⁷ *Id.* at 2.

⁴⁸ *Id.* at 2.

⁴⁹ Oklahoma Gas & Electric Company, Standard Pricing Schedule: R-VPP, available at <https://www.oge.com/wps/wcm/connect/e1be3a66-7394-47ec-a6ac-455d35428ac4/3.50+-+R-VPP+Stamped+Approved.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-e1be3a66-7394-47ec-a6ac-455d35428ac4-nPAYBP3>.

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² Ameren Illinois Company, Rider RTP – Real-Time Pricing, available at <https://www.ameren.com/-/media/rates/files/illinois/aie127drtp.pdf>.

1 minute residual market prices averaged into an hourly rate.⁵³ Since the residential meters are
2 programmed to record hourly usage only, the actual prices levied are based on the real-time
3 prices averaged across each hour.⁵⁴

4 The state of Wisconsin also has experience with real time pricing for medium and large
5 C&I customers. The major investor-owned utilities (Madison Gas & Electric,⁵⁵ Wisconsin
6 Electric Energies (We Energies),⁵⁶ Alliant Energy,⁵⁷ and Xcel Energy⁵⁸) and some municipal
7 utilities⁵⁹ in the state offer some form of hourly pricing to commercial customers. Of the nine
8 hourly pricing programs offered in Wisconsin, only one uses the hourly price from the
9 Midcontinent Independent System Operator (MISO) real-time market; the others use the day-
10 ahead energy price.⁶⁰

⁵³ Commonwealth Edison Company, Rate BESH – Basic Electric Service Hourly Pricing, available at https://www.comed.com/SiteCollectionDocuments/MyAccount/MyBillUsage/CurrentRates/05_RateBESH.pdf.

⁵⁴ *Id.*

⁵⁵ *See*, Madison Gas and Electric Company, Electric Rates and Rules, Electric - Volume 4, available at <https://www.mge.com/MGE/media/Library/pdfs-documents/rates-electric/electric-rates.pdf>

⁵⁶ We Energies offers programs through its two operating companies: Wisconsin Electric Power Company, available at <https://www.we-energies.com/pdfs/etariffs/wisconsin/elecrateswi.pdf> and Wisconsin Public Service Corporation, available at http://www.wisconsinpublicservice.com/company/wi_tariffs.aspx.

⁵⁷ Alliant Energy, Day Ahead Market Pricing Rider, available at <https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=327314>.

⁵⁸ Xcel Energy, available at <https://www.xcelenergy.com/stateselector?stateSelected=true&goto=%2F404%2520Page>.

⁵⁹ The municipal utilities' RTP programs are administered via the umbrella generation utility, WPPI Energy. An example tariff can be found here: <https://apps.psc.wi.gov/RATES/tariffs/viewfile.aspx?type=electric&id=2800>.

⁶⁰ Wisconsin Public Service Corporation, Real Time Market Pricing, available at https://www.wisconsinpublicservice.com/company/wi_tariffs/rtmp.pdf.

1 Georgia Power also has a program for commercial customers.⁶¹ While it offers hourly
2 pricing, Georgia Power is not a participant in a wholesale energy market so its rate is based on
3 the marginal fuel cost of its generation fleet for a given hour.⁶²

4 Further, SDG&E reviewed the recent benchmarking study conducted by the Electric
5 Power Research Institute (EPRI) to inform PG&E’s proposed RTP program.⁶³ This study
6 provides a useful benchmark for SDG&E’s program design by identifying best practices and
7 lessons learned from RTP programs offered by U.S. regulated utilities. SDG&E’s proposed
8 program design generally aligns with how most of the benchmarked RTP programs have been
9 designed, including the following key design elements:

- 10 • Most RTP programs provide hourly pricing based on regional wholesale energy
11 market postings, with day-ahead notification and no intra-territory spatial
12 differentiation.
- 13 • All but two of the active RFP rate schedules are based on day-ahead hourly
14 prices.
- 15 • Most RTP programs have been limited to large non-residential customers.
- 16 • Most active RTP programs have been optional (i.e., opt-in) with the exception of
17 provider of last resort offerings in certain jurisdictions.
- 18 • Only 2 of the 55 active RTP rate schedules identified include residential
19 customers, both occurring in states with full retail choice.⁶⁴

20 A summary of RTP rates from other California utilities and other jurisdictions are
21 included in Table 1 below.

⁶¹ Georgia Power, Real Time Pricing – Day Ahead Schedule: RTP-DA-5, available at <https://www.georgiapower.com/content/dam/georgia-power/pdfs/business-pdfs/rates-schedules/RTP-DA-5.pdf>.

⁶² *Id.*

⁶³ See, A.19-11-019, Exhibit PG&E-RTP-1, at 1-12 – 1-13 and n.35, (“EPRI, Benchmarking Study of US Regulated RTP Programs, Architecture, and Design Final Report (March 2021).”).

⁶⁴ PG&E’s recently approved RTP Pilot will also be available to residential customers. See, A.19-11-019.

1

Table 1. Overview of RTP in Other Jurisdictions

<u>Company or Jurisdiction</u>	<u>Day-Ahead Price</u>	<u>Real-Time Price</u>	<u>Time of Use</u>	<u>Hourly</u>	<u>Sub-hourly</u>
PG&E's Commercial and Industrial Real Time Pricing Pilot	X			X	
PG&E's DHRTP-CEV pilot	X			X	
SCE			X	X	
OG&E	X		X		
Ameren	X			X	
ComEd		X		X	
Wisconsin (8 DA rates)	X			X	
Wisconsin (1 RT MISO price)		X		X	
Georgia Power		X		X	

2

Day-ahead prices are the most commonly used pricing rate, and it is important to

3

acknowledge that, with one notable exception, no other rate is done at less than an hourly

4

granularity.⁶⁵ Based on reviewing information from the other California utilities and non-

5

California jurisdictions, and its own judgement, SDG&E concludes that it is reasonable and in

6

the best interest of rate payers to use day-ahead hourly prices. As discussed further in Section VI

7

below SDG&E's RTP Pilot rate for Stage 1 and Stage 2 will utilize the hourly CAISO Day-

8

Ahead market price.

⁶⁵ See, ED White Paper at 96 (detailing a collaboration between TeMix, Inc. and SCE that used automated technology to enable price responsiveness over several time horizons, including hourly pricing for the following 24-hours, 15 minute pricing before each hour and five minute pricing before each five-minute interval).

1 **IV. STAKEHOLDER ENGAGEMENT**

2 Prior to filing its RTP Pilot application, the GRC Phase 2 Decision directed SDG&E to
3 “use its best efforts to consult with key stakeholders including (i) community choice aggregators
4 (CCA) serving SDG&E customers and (ii) parties such as California Energy Storage Alliance,
5 California Solar & Storage Association, Enel X North America, Inc., and Ohm Connect, Inc.,
6 that have indicated an interest in RTP rate implementation.”⁶⁶ The GRC Phase 2 Decision
7 further encourages stakeholders to be involved early and provide input to SDG&E prior to the
8 filing of the application for purposes of expediting approval and implementation, to the extent
9 possible, of both stages of the Pilot.⁶⁷

10 Pursuant to this direction, SDG&E hired Guidehouse Consulting Services (Guidehouse)
11 to facilitate stakeholder workshops and align parties around common goals and objectives.
12 SDG&E hosted two workshops—one on September 28, 2021 and one on October 13, 2021.⁶⁸
13 The following stakeholders attended both of the scheduled workshops: Public Advocates Office
14 at the California Public Utilities Commission (Cal Advocates), The Utility Reform Network
15 (TURN), Joint Advanced Rate Parties (JARP), Enel X North America, Inc., Calpine, PG&E, and
16 San Diego Community Power. The first workshop focused on the goals, objectives, and desired
17 outcomes for the RTP pilot to help identify common ground among stakeholders. This
18 workshop included engaging stakeholders through the use of “Poll Everywhere”—software that
19 allows real-time, anonymous polling from participants cell phones. The polls were used to

⁶⁶ D.21-07-010, OP 6 at 89-90.

⁶⁷ *Id.* at 53-54.

⁶⁸ See, Attachment A hereto, *Real Time Pricing Pilot Stakeholder Workshop #1* PowerPoint (dated September 28, 2021) and Attachment B hereto, *Real Time Pricing Pilot Stakeholder Workshop #2* PowerPoint (dated October 13, 2021).

1 identify areas of alignment and common ground amongst stakeholders. The outcomes of this
2 workshop are discussed in the next section.

3 The second workshop focused on gathering input and feedback on the Pilot Stage 1
4 design. A draft term sheet for Stage 1 of the RTP Pilot was shared with the stakeholders in
5 advance of the workshop, and then each component of the term sheet was discussed in the
6 workshop. Key components discussed in the workshop included eligibility, enrollment and
7 unenrollment, rate design, proposed timeline, measurement, and evaluation (M&E), and
8 marketing, education, and outreach (ME&O).

9 Additionally, in preparing its Application, SDG&E considered stakeholder feedback and
10 proposed RTP designs that were filed in SDG&E's GRC Phase 2 proceeding and dynamic
11 pricing proceedings (A.19-03-002 and A.10-07-009) were reviewed and considered. Also
12 considered were the records in A.20-10-011 and A.19-11-019, including the EPRI benchmarking
13 report, regarding existing RTP rates in other jurisdictions and the merits of different markets.

14 Finally, during the Energy Division workshop held on June 24, 2022, Energy Division
15 staff clarified that the target maximum and minimum target participation numbers as included in
16 the ED Recommendation anticipated participation by both bundled and unbundled customers.⁶⁹
17 Accordingly, SDG&E is in the process of collaborating with the two Community Choice
18 Aggregators (CCAs) in the San Diego region, San Diego Clean Power (SDCP) and Clean Energy
19 Alliance (CEA) in an effort to create consistent Dynamic Pricing Pilots. SDG&E met with local
20 CCAs to socialize intended plans for both RTP pilot rates including overall pilot structure, rate
21 design, eligibility, implementation strategy and marketing. The CCAs expressed interest in

⁶⁹ ED Staff Recommendation at 4 (recommending customer caps for the RTP pilot of 10,000 customers for Stage 1 and 35,000 for Stage 2, with the minimum target at 10% of the cap; for the Export Compensation Pilot the recommended cap was 35,000 with SDG&E to recommend a minimum).

1 partnering with SDG&E on this initiative and coordination will continue to better understand
2 what is needed for them to offer similar RTP rate options to their customers. CCA participation
3 will be critical to obtaining participation sufficient for a robust evaluation of the RTP Pilot’s
4 objectives.⁷⁰

5 **V. OBJECTIVES AND DESIRED OUTCOMES**

6 Objectives, outcomes, and guiding principles for the RTP Pilot design should reflect and
7 support relevant policy drivers and balance customer and utility needs for a RTP rate. By clearly
8 setting goals, objectives, and outcomes, a specific RTP Pilot option can be designed to achieve
9 them. To assist with this, Guidehouse facilitated external workshops with SDG&E and the
10 interested parties to define objectives, desired outcomes, and evaluation principles in a holistic
11 manner. The results of these workshops are shown in the figures below. Figure 1 shows the
12 objectives for the RTP Pilot, which summarizes the considerations behind the RTP Pilot design
13 and directly reflects input received at the stakeholder workshops.

14 The first objective in Figure 1 – “Decarbonize California” – is an important objective that
15 the RTP Pilot will test as it aims to adjust participant usage to those periods in the day with less
16 carbon generation and therefore reduce greenhouse gases.

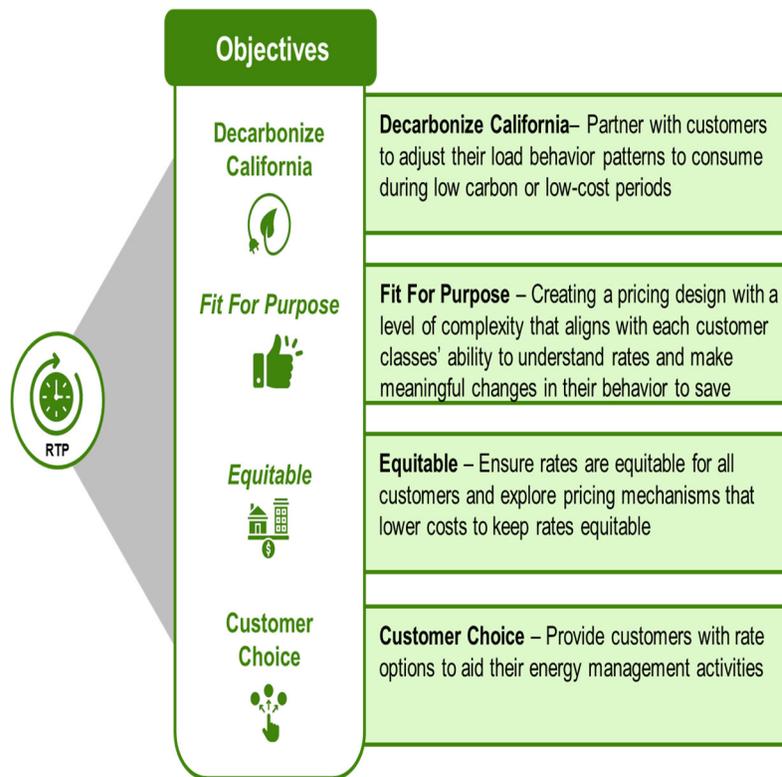
17 The second and fourth objectives in Figure 1 reflect the desire for an RTP rate that
18 customers will be able to understand and respond to in a meaningful way and that customers can
19 choose to better control their bills and their energy use. As the effectiveness of any RTP
20 program is predicated on customers’ ability to respond to the price signals, it is important to
21 match the rate’s complexity to the customers’ energy sophistication. Unlike other situations

⁷⁰ *Id.*, (“Pilot sizes should be large enough to provide sufficient evaluation data and statistically significant findings for the parties and the Commission to review and incorporate into tariff offerings.”).

1 where rate and billing simplicity are goals, such as residential rate design, an RTP program must
2 eschew simplicity, to some extent, to provide the requisite price signals needed for true load
3 flexibility.

4 The third objective in Figure 1 represents the commitment by SDG&E and the
5 stakeholder parties to pursue and advocate for equitable programs. Equitable rates are those that
6 have minimal cross-subsidization between participants and non-participants in the program. The
7 equitable-rates objective aligns with the goals in the CPUC’s Environmental and Social Justice
8 Action Plan (ESJ Plan).

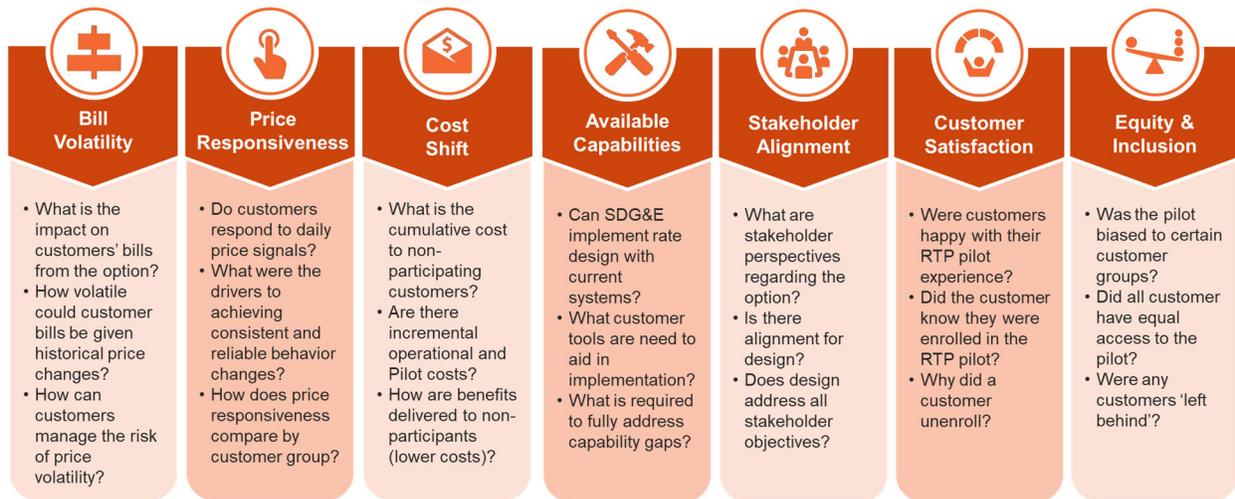
9 **Figure 1. RTP Pilot Objectives**



10 To determine if the RTP Pilot is meeting the objectives outlined in Figure 1, seven
11 guiding principles were developed. These guiding principles are summarized in Figure 2. In
12 general, these principles align closely with the suggested M&E metrics and potential benefits of
13

1 RTP pricing outlined in the Decision, including (1) reducing grid costs and greenhouse gases (2)
 2 enabling greater integration of renewables, (3) reducing the likelihood of blackouts, and (4)
 3 increasing the use of electricity at times when surplus renewable energy is on the grid.⁷¹

4 **Figure 2. RTP Guiding Principles**



5
 6 **VI. CAISO DAY-AHEAD ENERGY PRICE**

7 While there are other real-time pricing markets used in CAISO, such as the 15-minute
 8 real time market, the hourly day-ahead price gives the most actionable, accurate, and economic
 9 price signal to customers. First, SDG&E believes the hourly, day-ahead price is the most
 10 actionable RTP market. The day-ahead price signal will give participating customers time to
 11 plan their energy usage and act in the manner most beneficial for them. SDG&E has considered
 12 the 15-minute price signal suggested by JARP in SDG&E's GRC Phase 2, but, as SDG&E
 13 highlighted in that proceeding, SDG&E does not believe customers can respond meaningfully to
 14 market changes signaled every 15 minutes.⁷² CAISO releases 15-minute prices less than an hour

⁷¹ D.21-07-010 at 58-59.

⁷² See, e.g., A.19-03-002, Prepared Supplemental Rebuttal Testimony of Jennifer Montanez on Behalf of SDG&E (September 15, 2020) at JM-8 and JM-9.

1 before the effective interval, meaning that customers would have to constantly monitor energy
2 prices to effectively respond. Even with round-the-clock monitoring, customers may not be able
3 to adjust their operations in the given time. Providing such a price signal to customers with little
4 ability to respond could be punitive rather than beneficial.

5 Further, SDG&E believes day-ahead price signals are more accurate.⁷³ Day ahead
6 market prices are settled and available one day prior and therefore less likely to be revised than
7 CAISO real-time market prices from the 15-minute and real-time markets, which are more likely
8 to be subject to price corrections.⁷⁴ More accurate price signals support the RTP Pilot objective
9 of being fit-for-purpose (i.e., customer understanding of the rate and ability to make meaningful
10 changes in energy use), in that after-the-fact price changes could lead to customer confusion and
11 customer dissatisfaction in instances where customers took efforts to adjust their usage based on
12 a cited, but later-changed rate. Use of the real-time markets would also require SDG&E to
13 implement an ex-post settlement procedure into the tariff, which would be administratively
14 burdensome due to having to create a process to monitor price changes and then make the
15 necessary price corrections.

16 Finally, the day-ahead price is designed to send an economic price signal. The day-ahead
17 market is used to plan electric generation to match the forecasted load, as opposed to the 15-
18 minute and real-time markets, which are used to match the actual load. In other words, the day-
19 ahead market is designed to influence load, while the 15-minute and real-time markets are
20 responding to the short term needs of the grid by using pricing to control generator and storage

⁷³ CAISO, Business Practice Manual for Market Operations Version 78 (Revised November 17, 2021) at 398, (“Thus, CAISO expects that invalid Day-Ahead Market result publication to OASIS and CMRI would be unlikely.”).

⁷⁴ *Id.*, (“Although the CAISO will make every effort to validate market clearing processes and results prior to publication of results, this will not always be the case, particularly for Real-Time markets.”).

1 options. Accordingly, SDG&E believes that hourly, day-ahead pricing better serves the RTP
2 Pilot objectives.

3 **VII. ALIGNMENT TO OBJECTIVES AND DESIRED OUTCOMES**

4 The proposed Stage 1 RTP Pilot rate represents an initial step towards achieving the four
5 stated goals of the program. First, the hourly, day-ahead price signal is highly correlated to GHG
6 output for the electric sector.⁷⁵ To the extent that customers respond to higher hourly prices, they
7 will reduce consumption during times of higher GHG emissions. Second, the use of day-ahead
8 hourly pricing means that more customers are likely to understand the price signal and that
9 customers can better plan their energy usage for the next day. The hourly, day-ahead price signal
10 also ensures that customers can respond, rather than presenting them with price information that
11 they may not be able to do anything about. Third, the RTP Pilot presents an equitable solution to
12 providing more discrete price signals by directly linking the price signal to the individual cost
13 causation of each customer. Finally, the introduction of RTP rates to participating customers
14 gives those customers another option to better control their energy bills and manage their loads.
15 In this new rate, the incentives are aligned between customer and utility in ways that benefit all
16 parties, including non-participating customers.

17 **A. Customer Protection**

18 The Dynamic Pricing Pilot rates are based on the CAISO wholesale energy price that
19 encourages customers to import or export energy to the grid which allows them to profit from the
20 arbitrage opportunity offered by dynamic energy price. For customers to make money on these
21 rates they must import energy from the grid when the price is low, and in the case of the Export

⁷⁵ See, A.19-03-002, Prepared Testimony of California Solar & Storage Association, Ohm Connect, Inc., and California Energy Storage Alliance (“Joint Advanced Rate Parties”) (April 6, 2020), Chapter 2 at 2-1 – 2-8.

1 Compensation Pilot rate, sell energy back to the utility when the price is high. It is entirely
2 possible that a customer could lose money on the RTP Pilot if they are unable to adjust their
3 energy usage to take advantage of CAISO price fluctuations. This downside risk is inherent to
4 the Pilots design.

5 For the Export Compensation Pilot, SDG&E is not considering any bill protection or
6 incentive bill credits. In order for a customer to lose money on the Export Compensation rate,
7 the CAISO Day Ahead price would have to be negative and the customer would have to export
8 the energy anyway.⁷⁶ Accordingly, because there is little downside risk for the Export
9 Compensation Pilot, SDG&E does not believe bill protection or incentives are necessary.

10 However, SDG&E understands from the ED Staff Recommendations that ED would like
11 SDG&E to explore the possibility of some customer protections to incentivize participation and,
12 in order to meet the participation targets included in the ED Staff Recommendation, SDG&E
13 believes some incentives will be helpful.⁷⁷ Accordingly, SDG&E is proposing to offer incentive
14 bill credits to a maximum of 1,000 bundled residential customers in the RTP Pilot Stage 1.
15 SDG&E is not proposing an incentive bill credit for the Export Compensation Pilot. The
16 purpose of the incentive bill credit is to incentivize residential customers to participate—an
17 incentive SDG&E believes will be important to meeting the participation targets set out in the
18 ED Staff Recommendations. The incentive bill credit will be offered to RTP Pilot Stage 1
19 bundled residential customers at the time they sign up, when they complete the year 1 survey,
20 and when they complete the year 2 survey when the pilot is scheduled to end. The amount of

⁷⁶ CAISO Day Ahead prices for 2020 for SDGE_DLAP-APND were negative for a total of 72 hours which is less than 1% of the time.

⁷⁷ See, ED Staff Recommendation at 5-6, Section E.

1 each of the three incentive bill credits is \$100. Incentive bill credits are designed to encourage
2 participation in the rate from bundled residential customers and will further benefit participating
3 customers by limiting the potential downside risk of participating in the RTP Pilot.

4 SDG&E does not propose bill protection for the RTP Pilots or the Export Compensation
5 Pilots. With respect to the RTP Pilot, SDG&E believes implementing bill protection has the
6 potential to distort the data resulting from the Pilots because it has the potential to reduce
7 customer incentive to respond to the RTP rate signals. Additionally, bill protection benefits are
8 potentially unlimited and reduce customer incentive to respond to price signals. A customer with
9 bill protection will have incentive to respond to signals to the extent they want to save money,
10 but they will have no downside risk. Meanwhile, a customer with incentive credits may also
11 have reduced incentive to respond to price signals because they have a “buffer” in the form of
12 the credit, but the downside risk is not eliminated entirely.

13 Additionally, bill protection benefits are potentially unlimited while bill credits are a
14 known quantity and can be assessed for reasonableness prior to implementation. Further, from
15 an administrative standpoint, bill protection requires significantly more monitoring and
16 implementation costs than incentive bill credits. With incentive bill credits, customers are
17 provided a flat bill credit that does not require implementation of more sophisticated
18 administrative requirements such as bill analysis.

19 For RTP Pilot Stage 2, SDG&E proposes to assess whether incentive bill credits are
20 appropriate after reviewing the Pilot Stage 1 first year results in a working group. Any changes,
21 including whether to continue using incentive bill credits, will be considered in the working

1 group prior to the start of Pilot Stage 2 and will be included in the Tier 2 Advice Letter submitted
2 for approval.⁷⁸

3 As discussed in more detail below, SDG&E is not proposing any different or additional
4 bill credits or bill protection for low-income customers or customers in disadvantaged
5 communities.

6 **VIII. ENVIRONMENTAL AND SOCIAL JUSTICE ACTION PLAN**

7 The CPUC’s ESJ Plan, identifies rates that reduce pollutants, like RTP rates, as one of the
8 action items (2.7).⁷⁹ SDG&E’s RTP Pilot is expected to further the goals of the ESJ Plan. For
9 one, the ESJ Plan includes a goal to “increase investment in clean energy resources to benefit
10 ESJ communities.”⁸⁰ SDG&E’s RTP Pilot is an investment in clean energy that is expected to
11 reduce GHG emissions and may shave the top of evening peaks, improve renewables integration
12 due to flexible load, and increase electricity usage when there is a surplus of renewables.⁸¹
13 These benefits of the RTP Pilot will benefit ESJ communities.

14 Another ESJ Plan goal that will be furthered by the RTP Pilot is to “Enhance outreach
15 and public participation opportunities for ESJ communities to meaningfully participate in the
16 CPUC’s decision-making process and benefit from CPUC programs.”⁸² As stated in the
17 Supplemental Prepared Direct Testimony of April Bernhardt, (Chapter 5) SDG&E’s strategy will
18 “leverage its Community Based Organizations (CBO) partner network to be information sources

⁷⁸ ED Staff Recommendations at 5.

⁷⁹ CPUC, Environmental and Social Justice Action Plan, Version 1.0 (February 21, 2019) (ESJ Plan), Appendix A at 24, available at <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/news-office/key-issues/esj/environmental-and-social-justice.pdf>.

⁸⁰ *Id.* at 6.

⁸¹ D.21-07-010 at 47-48.

⁸² ESJ Plan at 7.

1 for ESJ communities, providing training and informational resources for CBOs to help their
2 clients understand the Dynamic Pricing Pilot programs and possible benefits.”⁸³ Such outreach
3 into potential ESJ communities will encourage meaningful participation in the RTP Pilot.

4 Further, the ESJ Plan goal to “monitor the CPUC’s ESJ efforts to evaluate how they are
5 achieving their objectives,”⁸⁴ will be furthered by the evaluation and measurement steps in this
6 Pilot. For instance, because Pilot Stage 1 will apply to residential customers, it will be possible
7 to monitor whether the RTP Pilot is really achieving benefits for customers located in ESJ
8 communities.

9 For purposes of the RTP Pilot rate only, the ED Staff Recommendation asks SDG&E to
10 recommend minimum enrollment targets for low-income customers or those in disadvantaged
11 communities (DACs).⁸⁵ Despite this recommendation, SDG&E is not proposing any minimum
12 participation from low-income customers and/or DAC customers. SDG&E is reluctant to
13 actively and specifically encourage low-income customers to enroll in the RTP Pilot when there
14 is the potential for downside risk. SDG&E does not propose prohibiting participation by low-
15 income customers, but, as described above in Section VII. A., the downside risk and potential to
16 lose money is inherent to the rate design and eliminating that risk through bill protection will
17 result in poor data.

18 Further, targeting low-income participation by incentivizing low-income customer
19 participation strikes SDG&E as irresponsible. If a low-income customer decides to participate

⁸³ Prepared Direct Testimony of April Bernhardt (Chapter 5) on Behalf of SDG&E (August 15, 2022) at AB-7.

⁸⁴ ESJ Plan at 8.

⁸⁵ ED Staff Recommendation at 4 (“For all stages of [the RTP] pilot[], SDG&E should recommend a minimum enrollment target for customers that are low income (CARE/FERA) and/or in disadvantaged communities and justify that target.”).

1 and, like any other customer, believes they have the sophistication and time necessary to
2 participate and benefit, SDG&E is not opposed to their participation, but SDG&E does not
3 believe it is in our low-income customers' best interest to be specifically targeted or incentivized
4 to participate in a pilot rate of this nature. It's also important to note that all low income
5 (CARE/FERA) customers were automatically enrolled in the Emergency Load Reduction
6 Program (ELRP)⁸⁶ and, due to the dual participation issue, they would have to un-enroll in ELRP
7 in order to participate in the RTP Pilot.

8 Finally, during the proposed working groups in the interim period between Stage 1 and
9 Stage 2, SDG&E will encourage the continued participation of organizations who can champion
10 the interests of ESJ communities.

11 **IX. RATE DESIGN PRINCIPLES**

12 As a matter of state policy, the Dynamic Pricing Pilots conform with the Commission's
13 Rate Design Principles, as addressed in Rulemaking (R.) 12-06-013, and included in D.15-07-
14 003.⁸⁷ Significantly, SDG&E's proposed RTP and Export Compensation Pilot rates align with
15 all relevant principles—they are based on marginal cost, based on cost causation principles, they
16 encourage conservation and energy efficiency, they provide customer choice and have been
17 designed to be as understandable as possible, the minimal cross-subsidy included supports state
18 climate policy, the incentives are explicit and transparent, they encourage economically efficient
19 decision making, and there is an emphasis on marketing, education and outreach to enhance

⁸⁶ D.21-12-015, OP 28 at 169-170.

⁸⁷ See, D.15-07-001, *Decision on Residential Rate Reform for Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company and Transition to Time-of-Use Rates* (July 3, 2015) at 27-28.

1 customer understanding and acceptance where appropriate.⁸⁸ The RTP and Export
2 Compensation Pilots are the first step towards implementing dynamic electricity rates which can
3 shift electricity usage to when the grid is least polluting. This is noted in the 2021 SB 100 Joint
4 Agency Report: “Load flexibility can also reduce GHG emissions by maximizing electricity use
5 when grid power is least polluting.”⁸⁹ The report goes on to state that the CPUC and CEC are
6 “taking steps to implement time-dependent electricity rates.”⁹⁰ The RTP Pilot supports these
7 California clean energy goals. Additionally, SDG&E’s rate design for the Dynamic Rate Pilots
8 include many of the proposed recommendations from the recent Demand Flexibility Whitepaper,
9 such as the dynamic energy prices based on real-time wholesale energy costs that reflect the
10 localized marginal cost of energy and dynamic capacity prices.⁹¹

11 Further, the RTP and Export Compensation Pilot rates are based on SDG&E’s marginal
12 cost—as reflected by the CAISO pricing included in the rate—and directly reflects the cost to the
13 utility of procuring energy on a daily basis. Further, as discussed above, the day-ahead price will
14 encourage conservation and demand reduction by sending higher price signals for times when
15 the projected load on the system is highest. By linking the retail rate to the day-ahead market
16 energy price, the RTP and Export Compensation rates provide the most transparency to
17 customers regarding the actual cost of energy, giving them the information needed to make
18 efficient decisions about their energy use. Additionally, for the RTP Pilot, although there is

⁸⁸ *Id.*

⁸⁹ California Energy Commission (CEC), 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment (March 2021) at 35, available at <https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity>.

⁹⁰ *Id.*

⁹¹ ED White Paper at 60-61.

1 some cross subsidization costs, which SDG&E minimizes by leveraging existing functionality
2 from the Grid Integrated Rate (Schedule PUBLIC GIR), the RTP Pilot supports the state’s
3 climate goals to shift electricity usage to the time of day when the grid is polluting less.

4 While SDG&E supports opening the Export Compensation Pilot Stage 2 rate to all
5 customers, including Net Energy Metering (NEM) and including customers with energy storage
6 from non-renewable sources, this is a significant change in Commission policy. California has
7 long incentivized energy export from behind-the-meter renewable generation though NEM,
8 which provides compensation to qualifying clean energy resources; however, the California
9 utilities have never been authorized or required to purchase non-renewable energy from
10 customers. Indeed, NEM battery capping policies explicitly limited exports from NEM
11 customers to energy that is proven to be produced by eligible, renewable Behind the Meter
12 (BTM) generation. By recommending that the Export Compensation Pilot be open to all
13 customer classes except streetlighting,⁹² a recommendation that SDG&E is willing to consider
14 for Stage 2 of the Export Compensation Pilot, ED Staff is recommending that SDG&E purchase
15 grid energy that is stored by customers in BTM storage systems, with no expectation that this
16 energy is produced by renewable generation. This policy change is justified by California’s
17 recent electric reliability challenges and the gradual transition to a renewable grid, but the
18 Commission must be aware that utilities cannot expect energy exports compensated by the
19 Export Compensation Pilot rate to be renewable. It is likely that energy stored by customers
20 when prices are low will have lower GHG emission rates than the energy discharged when prices
21 are high. Therefore, although not 100% renewable, energy exported pursuant to the Export
22 Compensation Pilot rate should still provide a positive benefit to California.

⁹² ED Staff Recommendation at 4.

1 Despite the ED Staff Recommendation excluding NEM customers from the Export
2 Compensation Pilot,⁹³ SDG&E will consider allowing NEM customers to participate in the
3 Export Compensation Pilot Stage 2 specifically to try to maximize the amount of renewable
4 energy that will be flowing to the grid. However, as mentioned above regarding battery capping
5 policies, it is unclear how much renewable energy will be available that isn't already being
6 accounted for under NEM.

7 **X. TIMING CONSIDERATIONS**

8 Although the ED Staff Recommendation recommends that Stage 1 and Stage 2 of the
9 RTP Pilot extend for a 6-month enrollment period, plus one year,⁹⁴ SDG&E is proposing both
10 RTP Pilots each extend for two years. RTP Pilot Stage 1 would start on Q4 2024 and ends Q3
11 2026 and RTP Pilot Stage 2 would start on Q4 2026 and ends Q3 2028. SDG&E is proposing
12 workshops after implementation of the first year of the pilot such that available data and
13 evidence can be considered in the design of RTP Pilot Stage 2. SDG&E proposes to finalize its
14 RTP Pilot Stage 2 design through an Advice Letter (AL) filing in the first quarter of 2026 for
15 approval in the second quarter of 2026 and implementation in the fourth quarter of 2026. This
16 would allow SDG&E to incorporate any relevant lessons learned in RTP Pilot Stage 1 into the
17 RTP Pilot Stage 2's design and expansion of the pilot to all TOU rate schedules and include Net
18 Energy Metering customers as well. The 2nd year of RTP Pilot Stage 1 will be used for
19 designing and implementing RTP Pilot Stage 2 while still allowing customers to remain on the
20 RTP pilot. Extending the Pilot Stage 1 until Pilot Stage 2 is ready to start will provide pilot

⁹³ *Id.*

⁹⁴ *Id.*

1 customers a better option to remain on a RTP rate as opposed to ending Pilot Stage 1 and making
2 the pilot customers wait up to six months before the Pilot Stage 2 is ready to begin.⁹⁵

3 Pilot Stage 2 is a 2-year pilot for similar reasons. If the pilot is successful, then SDG&E
4 can use the 2nd year of the pilot to plan and design a non-pilot RTP rate while still allowing the
5 pilot customers time to remain on the RTP rate until the non-pilot rate is ready. Also due to the
6 complexity of the rate and potential variability in weather that may affect CAISO Day Ahead
7 hourly prices, the results of both pilots will be more robust with 2 years rather than only 1 year of
8 analysis.

9 SDG&E proposes to start the Export Compensation Pilot Stage 1 at the same time as the
10 RTP Pilot Stage 1 because it should reduce the cost to implement, while still encouraging EV
11 adoption and fulfilling the D.20-12-023 requirement.⁹⁶ Implementation costs will be reduced
12 because the billing system will be able to test for changes to the RTP Pilot and Export
13 Compensation Pilots at the same time. The Export Compensation Pilot Stage 1 will start in Q4
14 of 2024, the same time as the RTP Pilot Stage 1, and will end Q3 2026. The Export
15 Compensation Pilot Stage 2, which SDG&E anticipates will include all TOU customers, except
16 street lighting, will start in parallel with RTP Pilot Stage 2, Q4 2026. Finally, at the end of Stage
17 2 the Dynamic Pricing Pilots, and as discussed in more detail in the testimony of Ray Utama,
18 SDG&E does not anticipate ending Dynamic Pricing Pilot rates; however, SDG&E reserves the

⁹⁵ See, ED Staff Recommendations at 5, (“Stage 2 of the [RTP] pilot should start no later than 6 months from the end of Stage 1.”).

⁹⁶ SB 676, Stats. 2019-2020, Ch. 484 (Cal. 2019), states that it is the policy of the state and the intent of the Legislature to accelerate electric vehicle grid integration; see, ED Staff Recommendations at 5, (“The export-compensation pilot and Stage 1 of the RTP pilot should start at the same time.”).

1 right to seek Commission authority to terminate any of the Dynamic Pricing Pilot rates if the
2 circumstances are such that maintaining the rate is impractical.⁹⁷

3 **XI. SAFETY CONCERNS**

4 Expanding eligibility of the Export Compensation Pilot rate to non-EV customers, as
5 expected in Export Compensation Pilot Stage 2, must prioritize safety. All customers enrolling
6 in the Export Compensation Pilot rate must receive approval to discharge to the grid through a
7 Rule 21 Interconnection agreement.

8 A Rule 21 application for energy export allows SDG&E to study the impacts of grid
9 exports from these customers on the distribution system. Additionally, such agreements ensure
10 awareness of all SDG&E customers exporting to the grid and avoids unintended energization of
11 distribution lines when SDG&E has de-energized those lines for reasons such as safety and
12 repair. Importantly, although some customers have Rule 21 non-export agreements, it will need
13 to be made clear that only a Rule 21 export agreement will satisfy the eligibility requirement for
14 the Export Compensation Pilot rate.

15 **XII. SUMMARY AND CONCLUSION**

16 This concludes my prepared supplemental direct testimony.

⁹⁷ Prepared Direct Testimony of Ray Utama (Chapter 4) on Behalf of SDG&E (August 15, 2022) at RU-5.

1 **XIII. STATEMENT OF QUALIFICATIONS**

2 My name is Jeff DeTuri. My business address is 8315 Century Park Court, San Diego,
3 CA 92123. I am employed by SDG&E and my current title is Real Time Pricing Manager in the
4 Customer Pricing Department. My responsibilities include oversight of development of real-time
5 pricing strategies and analysis needed for the development of electric rates. I joined SDG&E in
6 August 2003 and have held various positions with increasing levels of responsibility within San
7 Diego Gas & Electric. Prior to joining SDG&E, I worked as an accounting professional for
8 various companies throughout San Diego County. I received a Bachelor of Accountancy degree
9 and a Master of Business Administration from the University of San Diego.

10 I have previously testified before the California Public Utilities Commission.

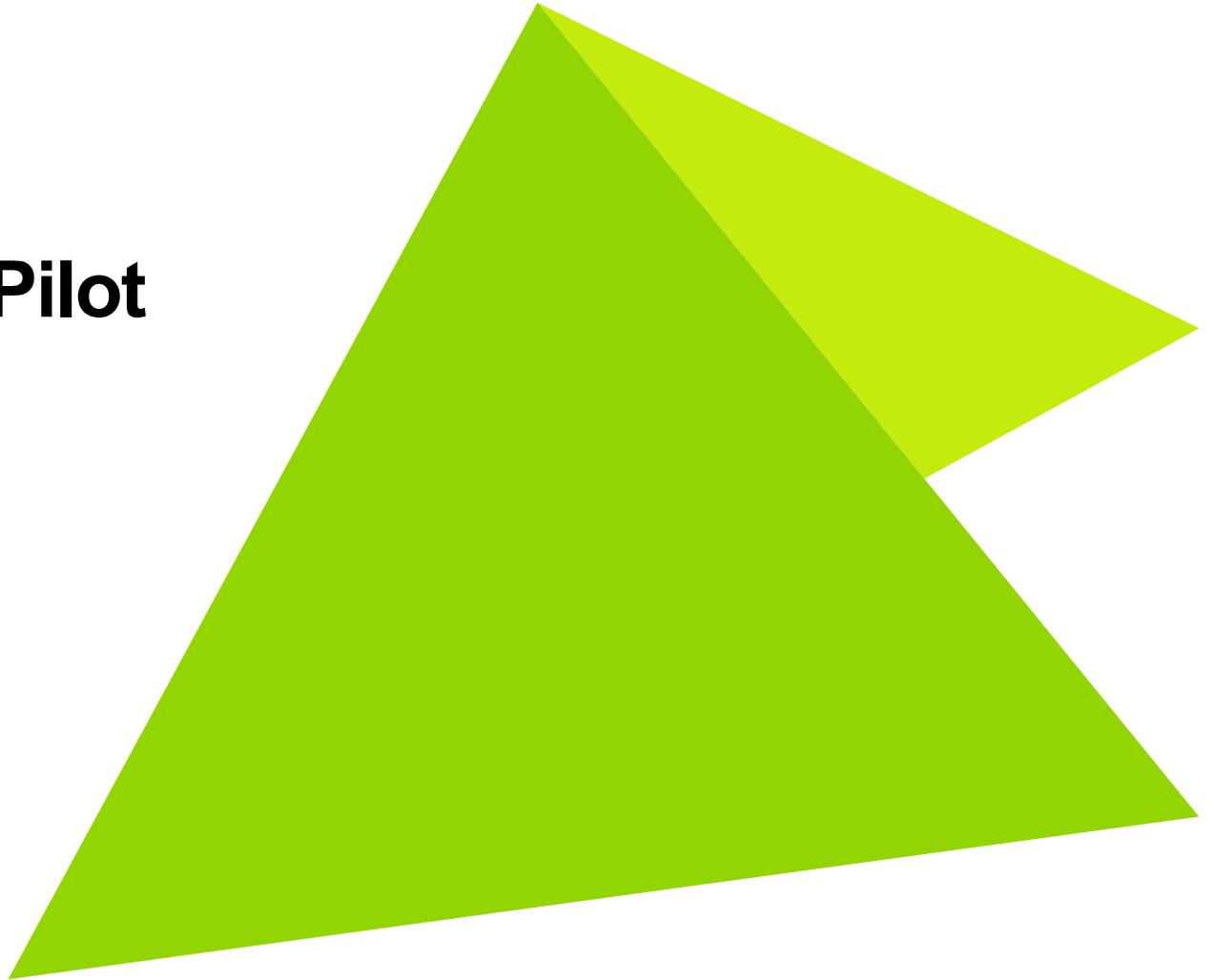
ATTACHMENT A



Real Time Pricing Pilot Stakeholder Workshop #1

San Diego Gas & Electric

September 28, 2021





Agenda

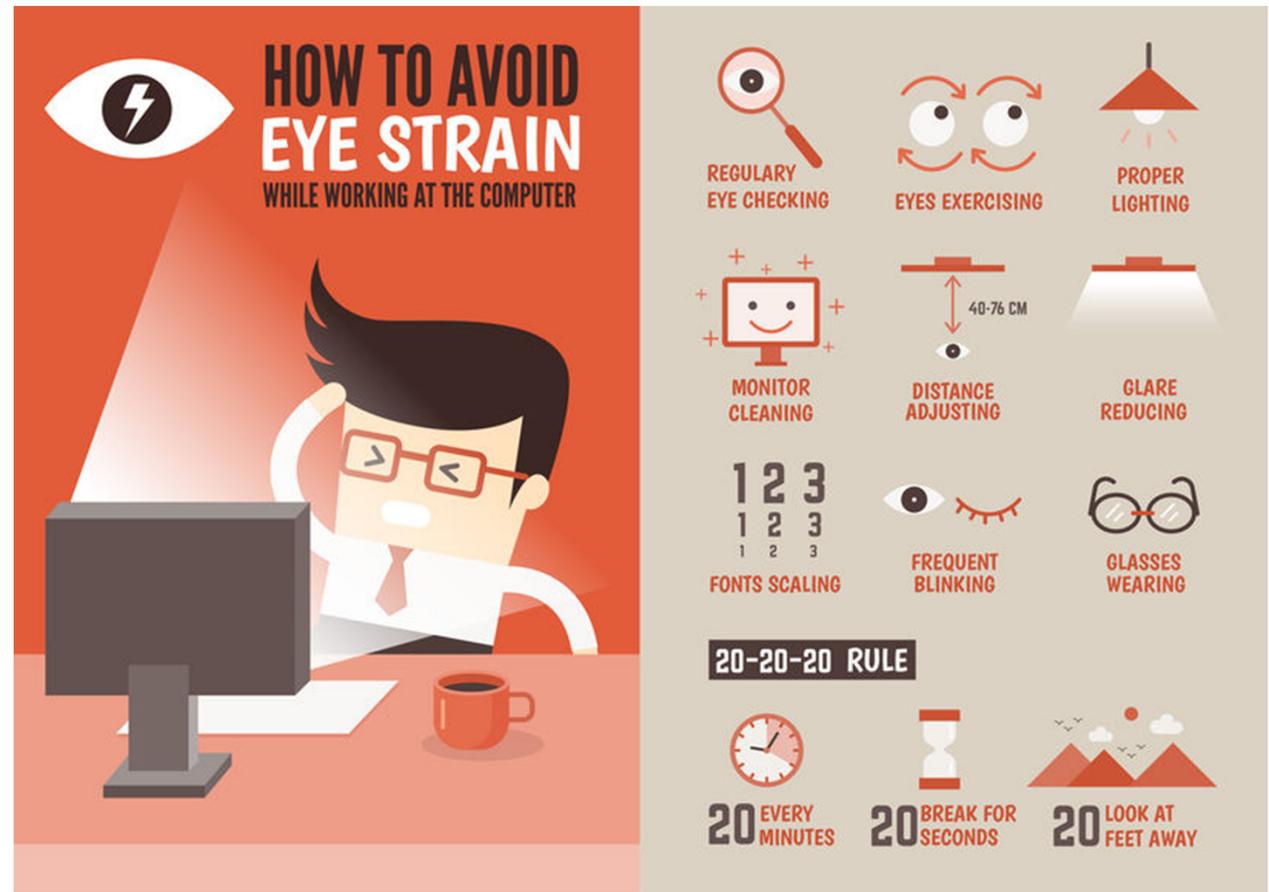
Introduction – Safety Tip, Roll Call, Workshop Objectives, Structure, and Framework	10 Min
RTP Pilot Program Requirements	5 Min
Defining Objectives - Starting with the End in Mind	15 Min
Prioritization Framework	5 Min
Exercise	15 Min
Defining Desired Outcomes – What Do You Want to Achieve?	15 Min
Developing Evaluation Principles	15 Min
Closing Comments & Next Steps	5 Min

Introduction

Safety Tip

Workplace Eye Health & Safety

- Wear proper eye protection equipment when in the field and around the house
- As office workers, be aware of eye strain

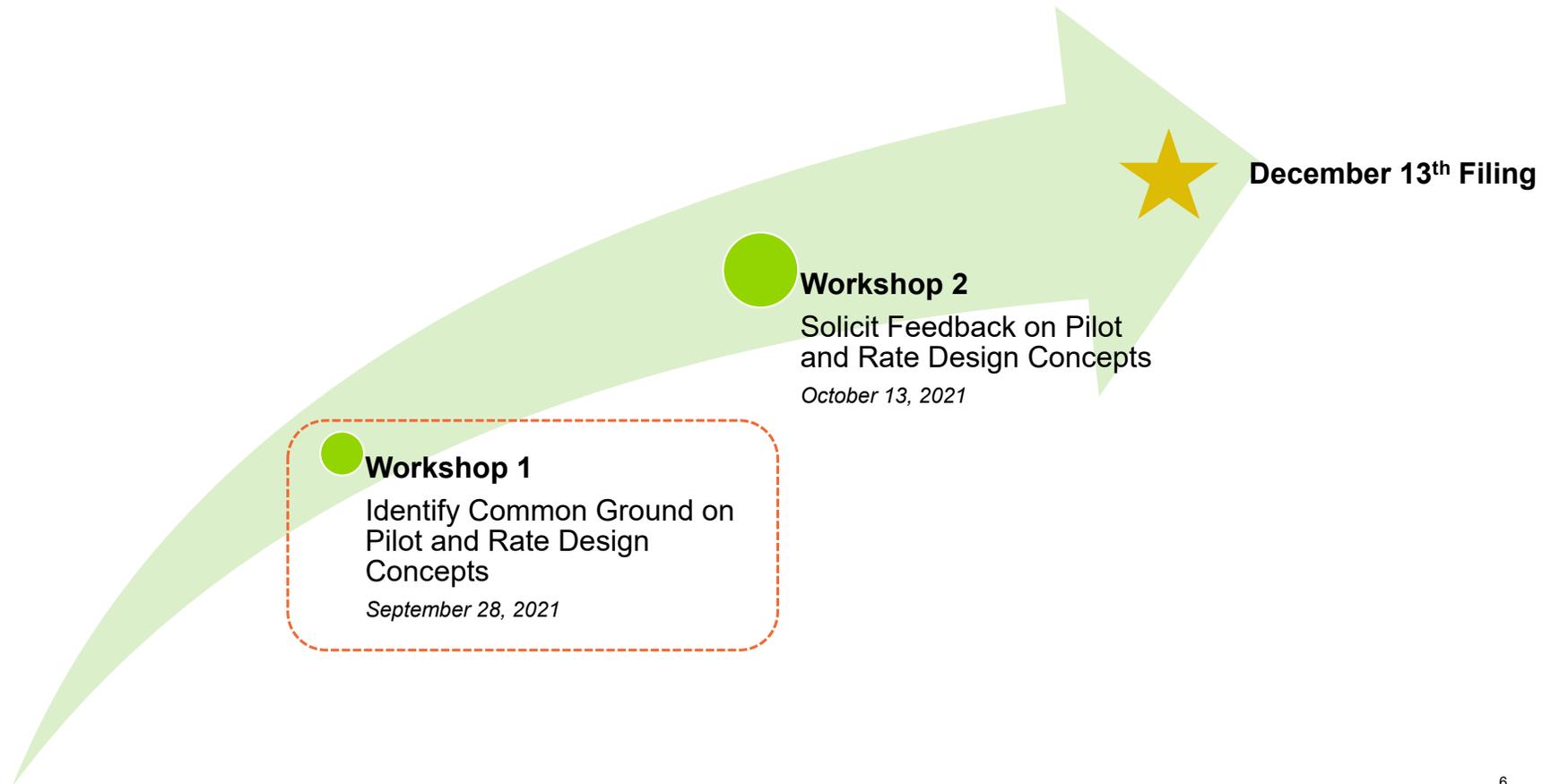


Our goal is to have a very interactive working session

- Please speak up!
- Be candid and honest.
- Minimize distractions as best as possible.
- Poll Everywhere and other tools & techniques will be used to ensure that the meeting is productive. Please engage in the use of these tools!
- We are not starting with a blank slate. Based on our review of the GRC Phase 2 filing and decision, we have created potential objectives and desired outcomes to react to. These can and should be refined and tailored. Step in to redirect us if needed!
- The outcome of this workshops will be critical to designing the RTP pilot program. **Your engagement and feedback today are essential.**
- Anyone can declare ELMO – Enough Let's Move On.

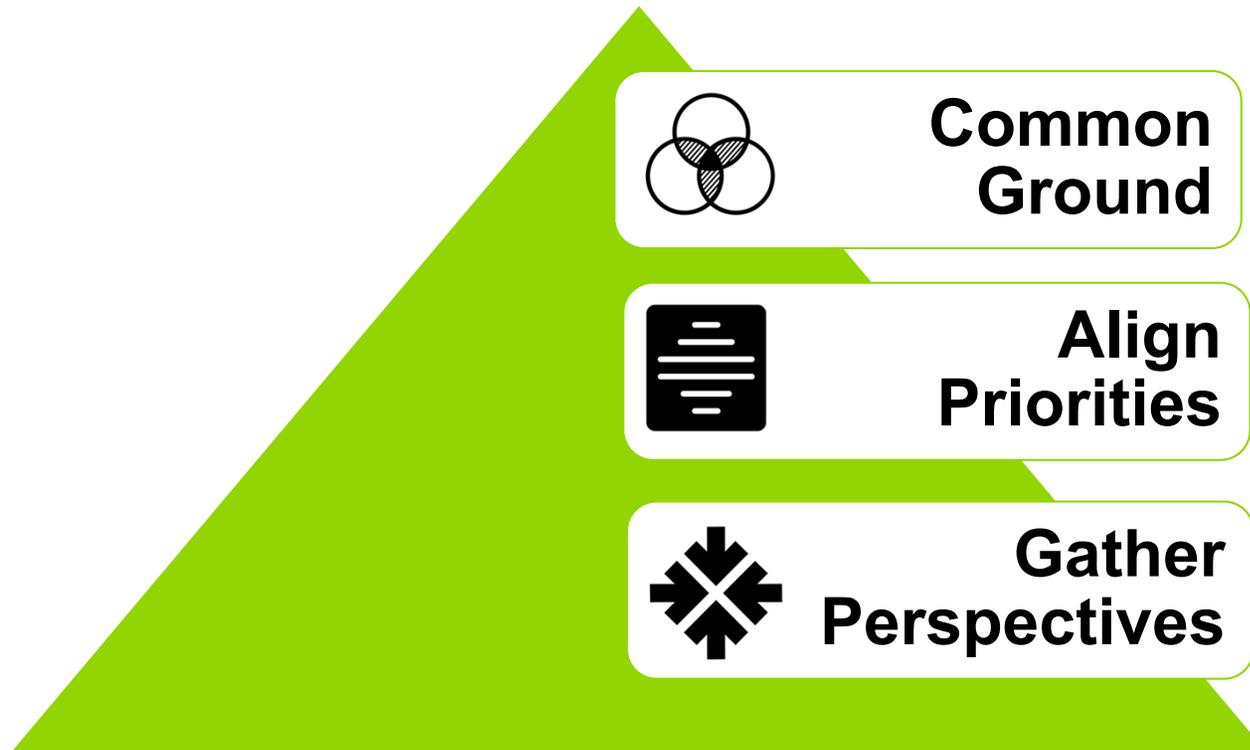
RTP Stakeholder Workshop Timeline

The objective of these workshops is to drive alignment on goals and objectives for real-time pricing (RTP), and to preview pilot program and rate design concepts for feedback.



Defining Success for Today's Workshop

What will we accomplish?



Workshop Structure & Expected Outcomes

Today's workshop is designed to address SDG&E's Real Time Pricing Pilot Program Objectives & Outcomes

- Differentiate between Objectives, Outcomes & Principles
- Guidehouse presents potential objectives to start conversation
- Team discusses objectives to create a common understanding
- Guidehouse presents potential outcome statements and Team discusses potential modifications or enhancements
- Guidehouse presents potential principles for discussion



Objectives are expectations of achievements or accomplishments.



Outcomes are specific targets designed to help reach the objectives.



Principles are guides for evaluation of proposals to meet objectives.



NEXT WORKSHOP:
Development of options
to compare against
Principles

We hope to achieve a common understanding of objectives, clarity on desired outcomes, and alignment on principles for evaluating options through discussion and creating a common language

RTP Pilot Program Requirements Overview

Requirements for Pilot Design

Pilot Design must address the following:

 RTP Pricing Design		 RTP Pilot Program Design	
Element	Description	Element	Description
1	Recommendation for rate design based on either 15-minute real-time price or day-ahead hourly price recommended with supporting information and data supporting the recommendation	5	Participation targets by class and any Pilot Stage 1 caps
2	Mechanisms, such as a capacity adder, to recover stranded costs be structured. Should consider three to four different peak TOU prices and an hourly capacity adder.	6	Eligibility for both Stage 1 and 2 to include addressing how to avoid double-counting, such as preventing enrollment from customers enrolled in the RTP-based dynamic rate from dual-participating in another market-integrated, supply-side demand response pilot program.
3	Recommendation on whether an iterative capacity adder design versus a simple design is needed and address how Pilot Stage 1 design will inform the design of the capacity adder in the Pilot Stage 2.	7	Address the feasibility of and the barriers for an application programming interface (API) to transmit price signals
4	The application should include information, data, and modeling to show the potential impact of transmission rate time differentiation on the RTP pilot rates, to include a comparison of the proposed pilot rate design with current transmission rate structure and with time-differentiated transmission rates.	8	Detailed evaluation plan for Stage 1, and a proposed evaluation plan for Stage 2, to include items set forth in Section 5.6 of decision.
		9	The application should include a proposed process for a working group to facilitate development of the Pilot Stage 2, including final design elements and evaluation criteria.
		10	The application should include a proposed timeline and scheduling worksheet (such as a Gantt chart) for both stages of the pilot, including proposed pilot duration.
		11	The application should include a proposed duration for each stage of the pilot. For Pilot Stage 1, the application may also include a proposal for a summertime only RTP pilot.

Defining Objectives



Starting with the End in Mind

What does success look like?



Objectives

- Decarbonize California**

Decarbonize California– Partner with customers to adjust their load behavior patterns to consume during low carbon or low-cost periods
- Fit For Purpose**

Fit For Purpose – creating a pricing design with a level of complexity that aligns with each customer classes' ability to understand rates and make meaningful changes in their behavior to save
- Equitable**

Equitable – Ensure rates are equitable for all customers and explore pricing mechanisms that lower costs to keep rates equitable
- Customer Choice**

Customer Choice – Provide customers with rate options to aid their energy management activities

What other objectives should be considered?

Others?

- "Indifference"**
- Innovation**
- Optimize and Align**
- Cost Reflective Rates**

Prioritization Framework



**Decarbonize
California**



Fit for Purpose



Equitable



Customer Choice

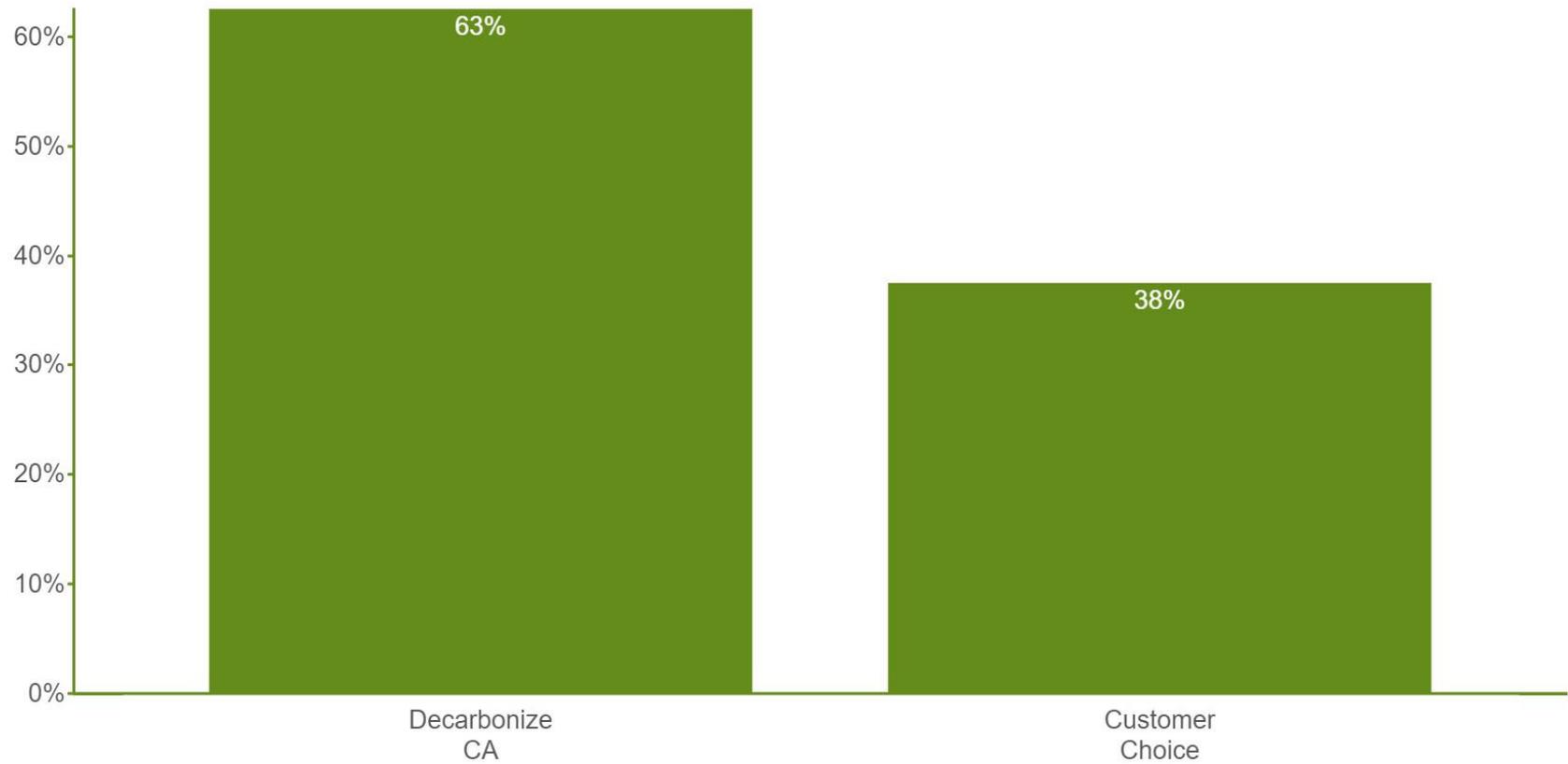
	Decarbonize California	Fit for Purpose	Equitable	Customer Choice
Decarbonize California		✓	✓	✓
Fit for Purpose			✓	✓
Equitable				✓
Customer Choice				

We will use a pairwise approach to developing the ‘weights’ above:

“Prefer Decarbonize California to Simple”

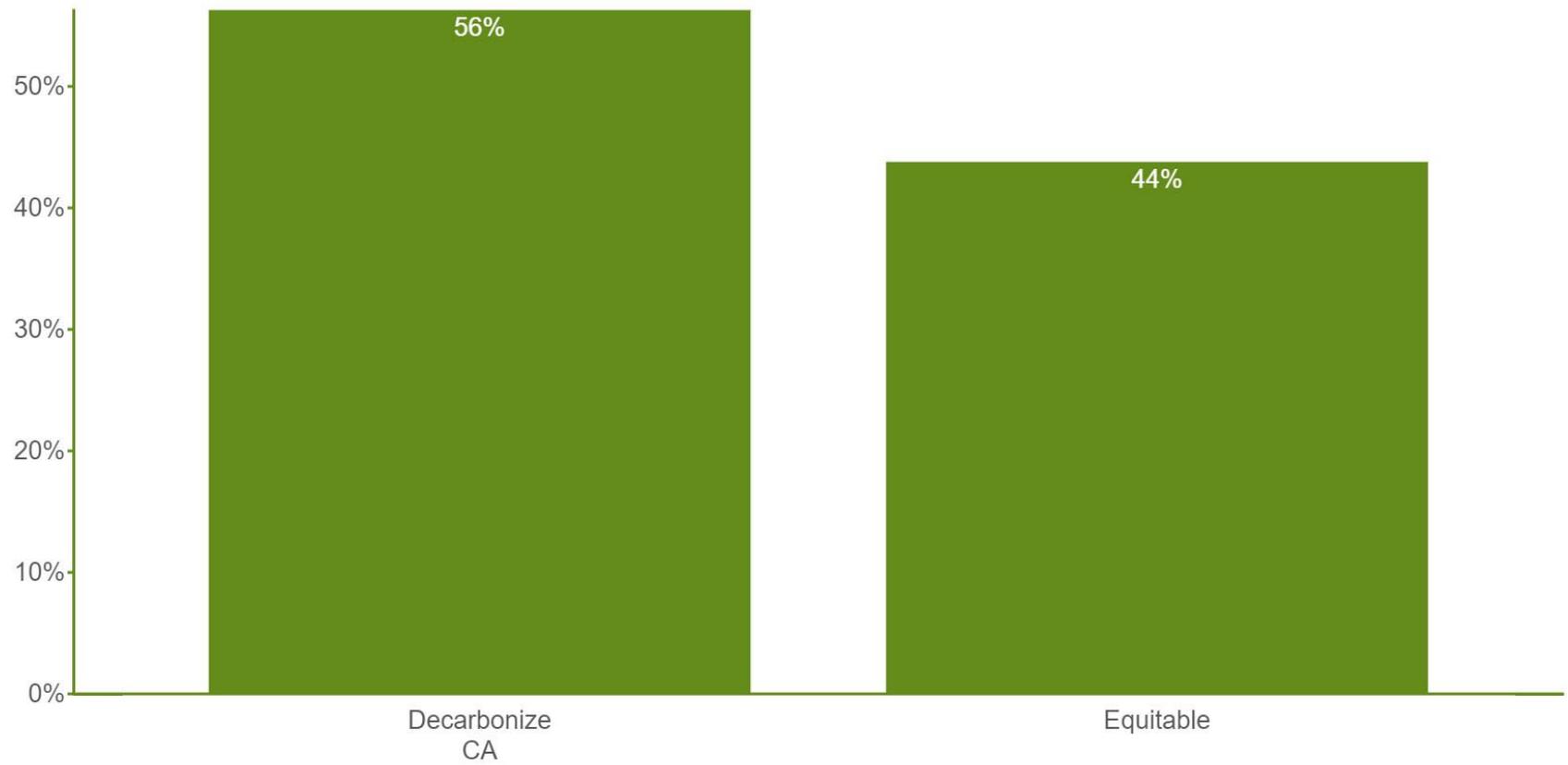
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Decarbonize CA or Customer Choice?



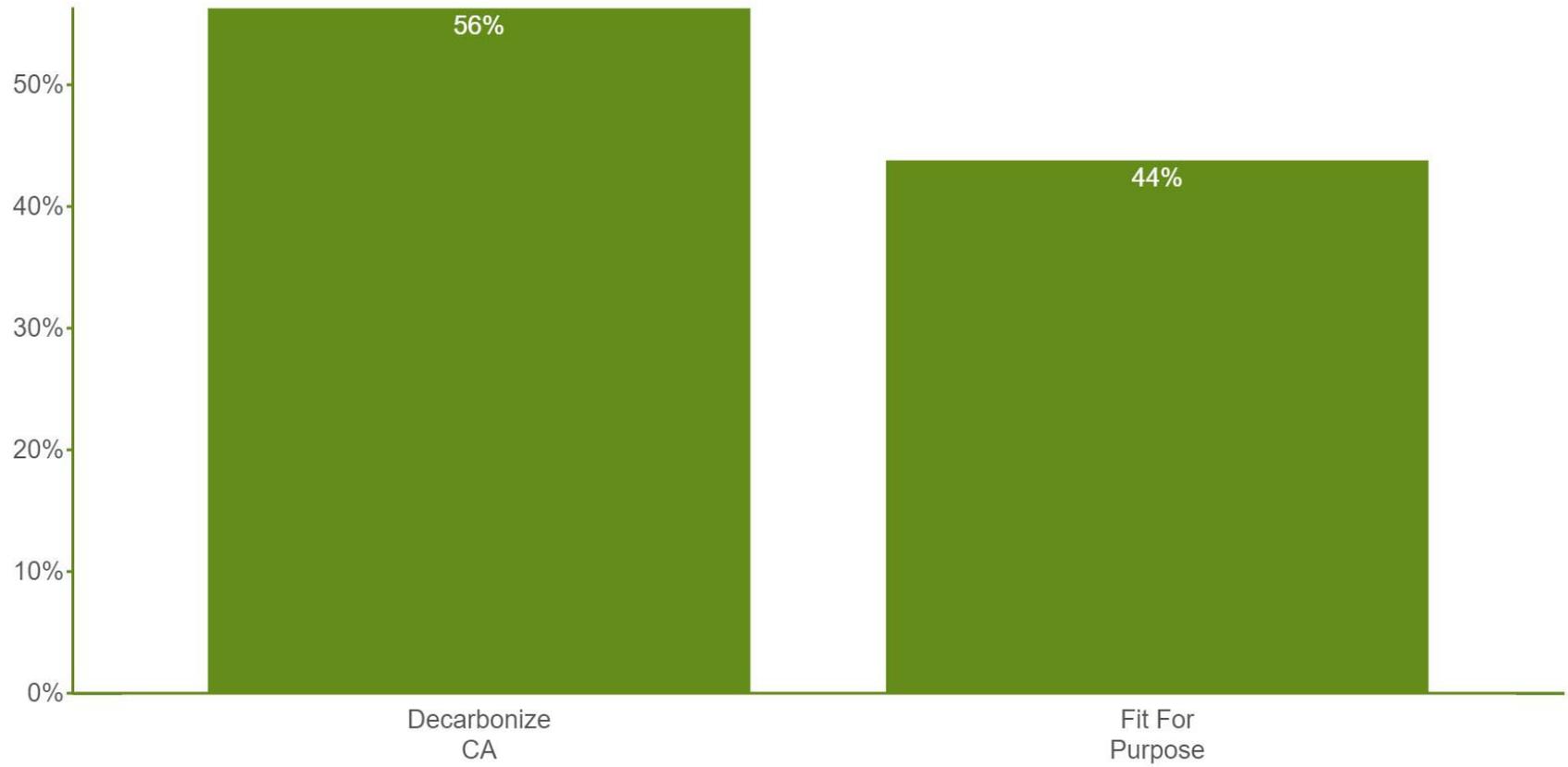
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Decarbonize CA or Equitable?



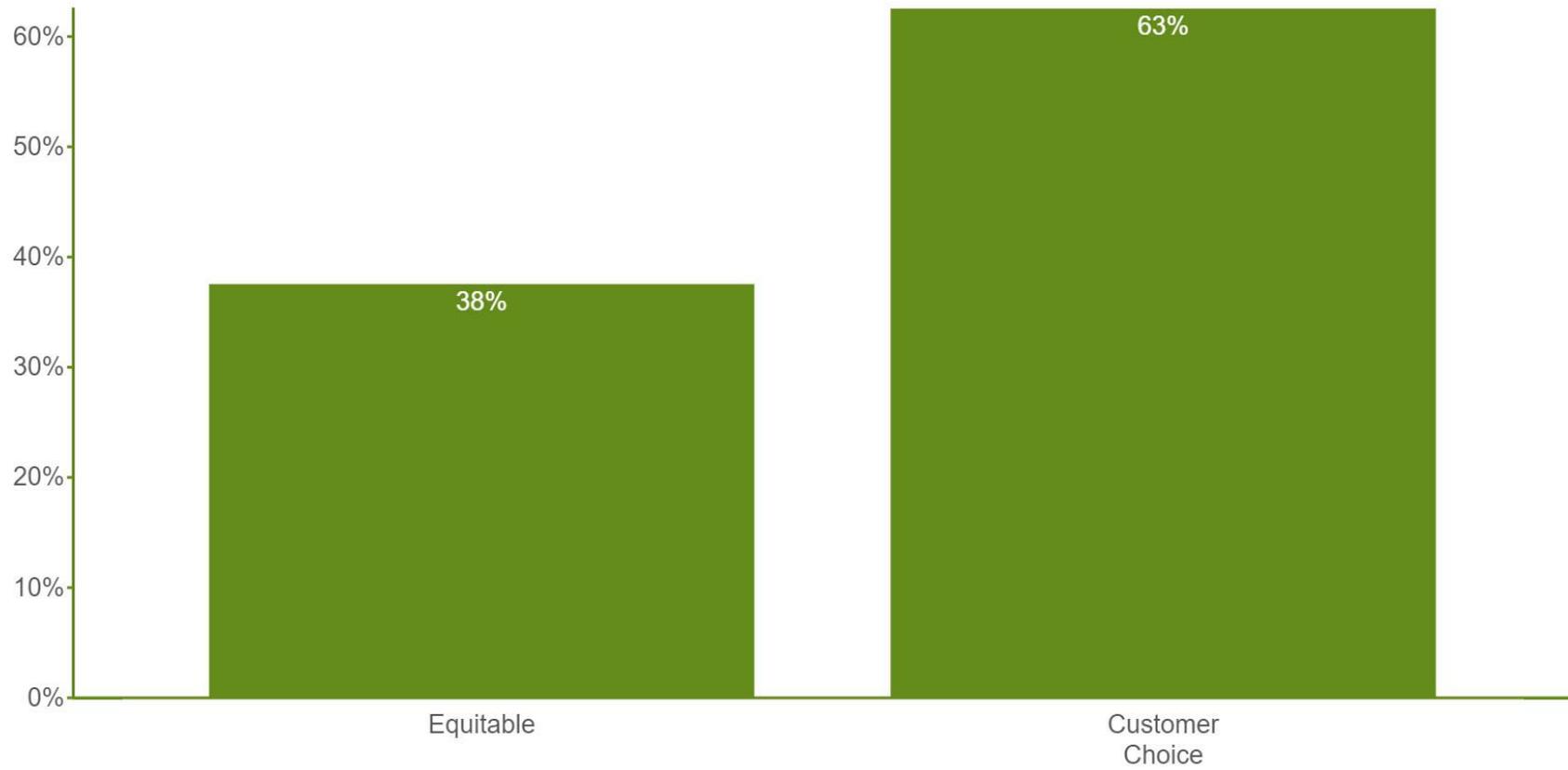
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Decarbonize CA or Fit For Purpose?



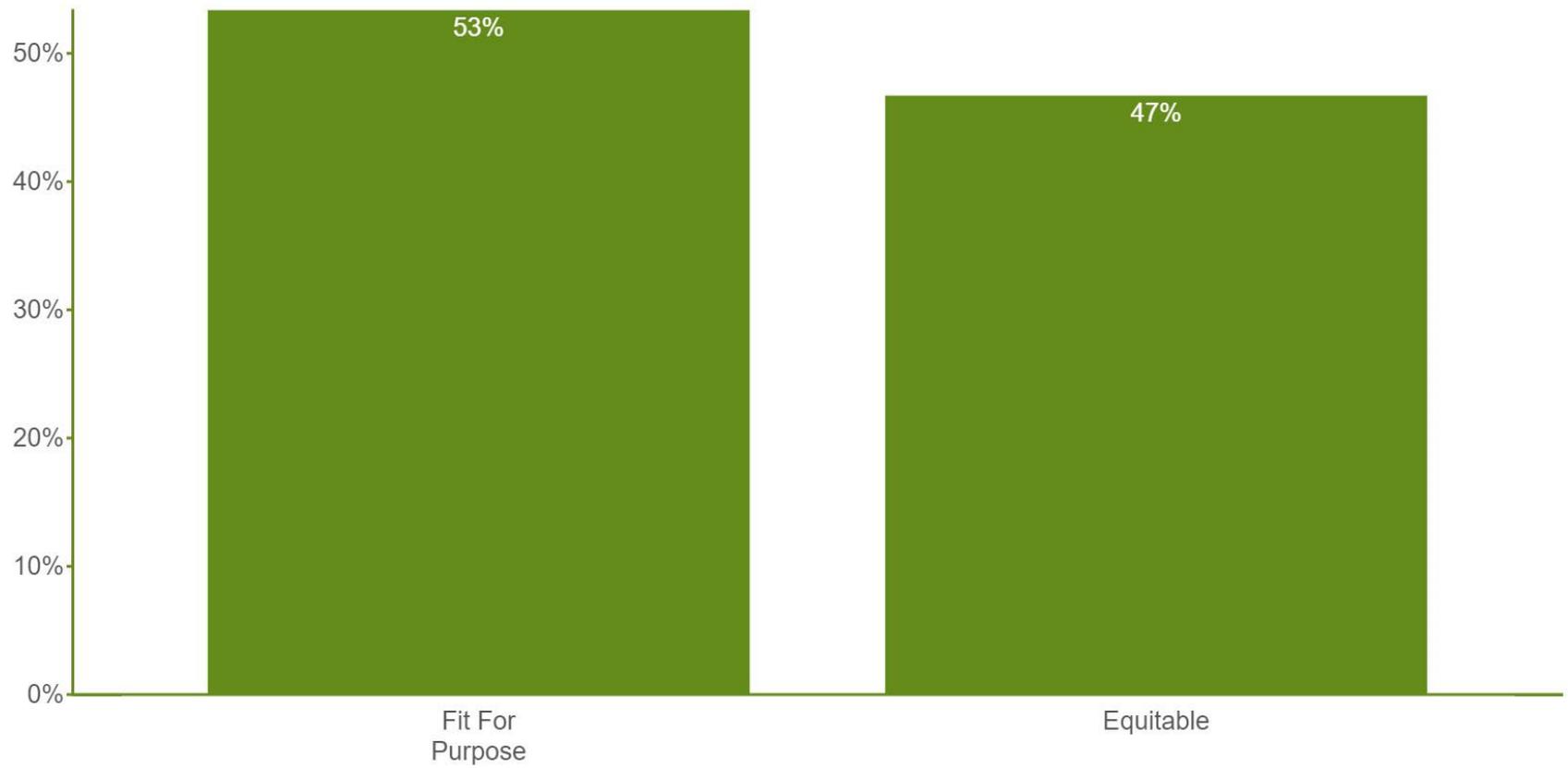
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Equitable or Customer Choice?



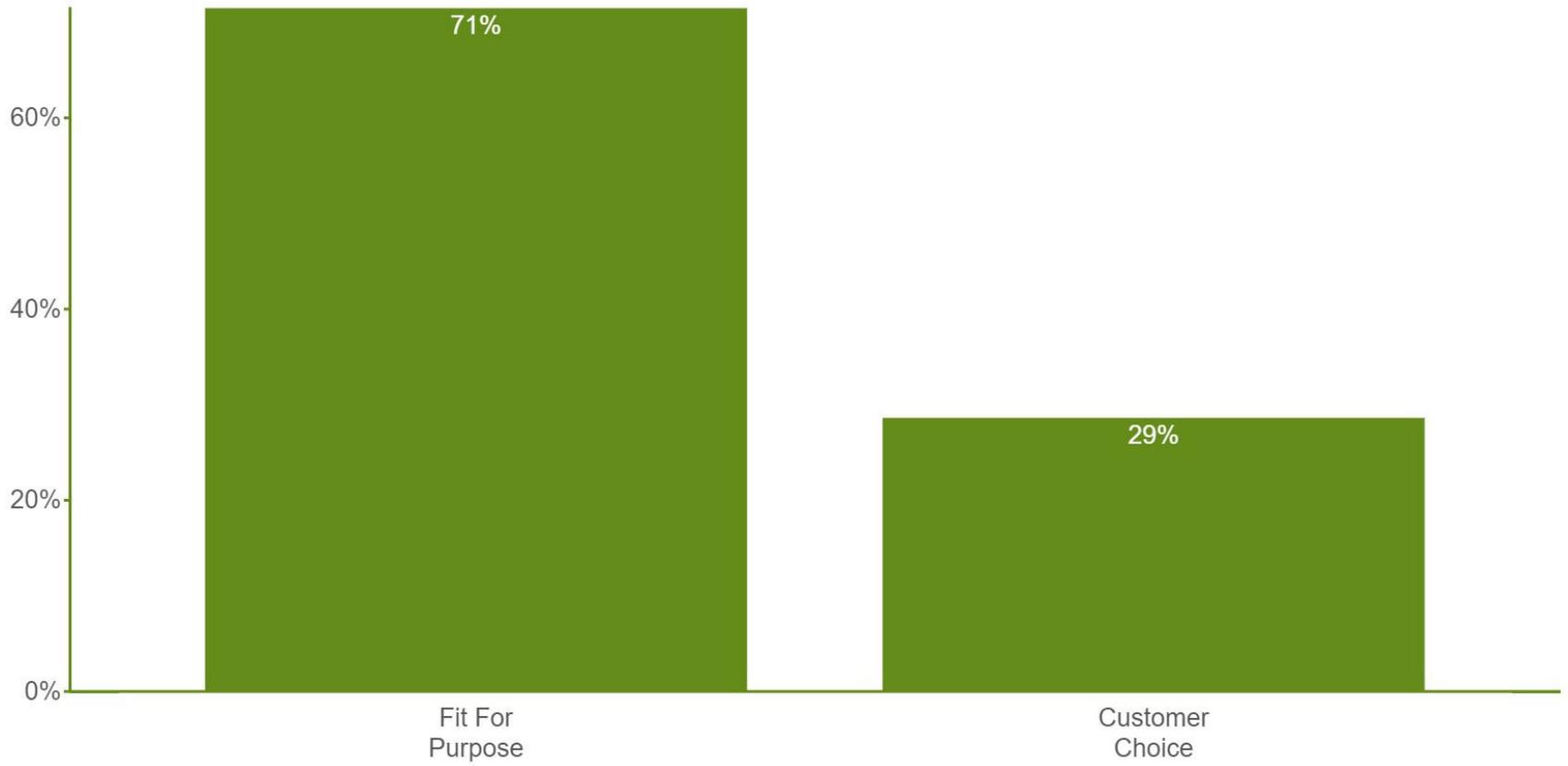
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Fit For Purpose or Equitable?



🔒 Poll locked. Responses not accepted.

Fit For Purpose or Customer Choice?



Results of Weighting



		Decarbonize California	Fit for Purpose	Equitable	Customer Choice	Total	Percent
A	Decarbonize California		A	A	A	3	50%
B	Fit for Purpose			B	B	2	33%
C	Equitable				D	0	0%
D	Customer Choice					1	17%

Defining Desired Outcomes



Outcomes - What do you want to achieve?



Create market-based price signals directly to customers to encourage changes in behavior consistent with market and grid needs

Develop pricing option that encourages adoption of technologies that help customers manage energy use on a daily basis



Design innovative and simple Pilots to align customer and company interests and maximize the benefits of dynamic pricing for all stakeholders

Understand risks and rewards from dynamic pricing options for different customer classes



Understand customers' perspectives and levers to drive consumption behaviors

Develop customer education tools to help them adopt dynamic pricing and leverage new Distributed Energy Resource options



Demonstrate sustained customer response to price signals to leverage dynamic pricing to reduce carbon and meet CA Clean Energy goals

Enable RTP for both SDG&E and CCA customer with goal of reducing carbon content for supply



Ensure equity among and within customer groups and ensure all customers are provided equal access to the benefits of the pilot



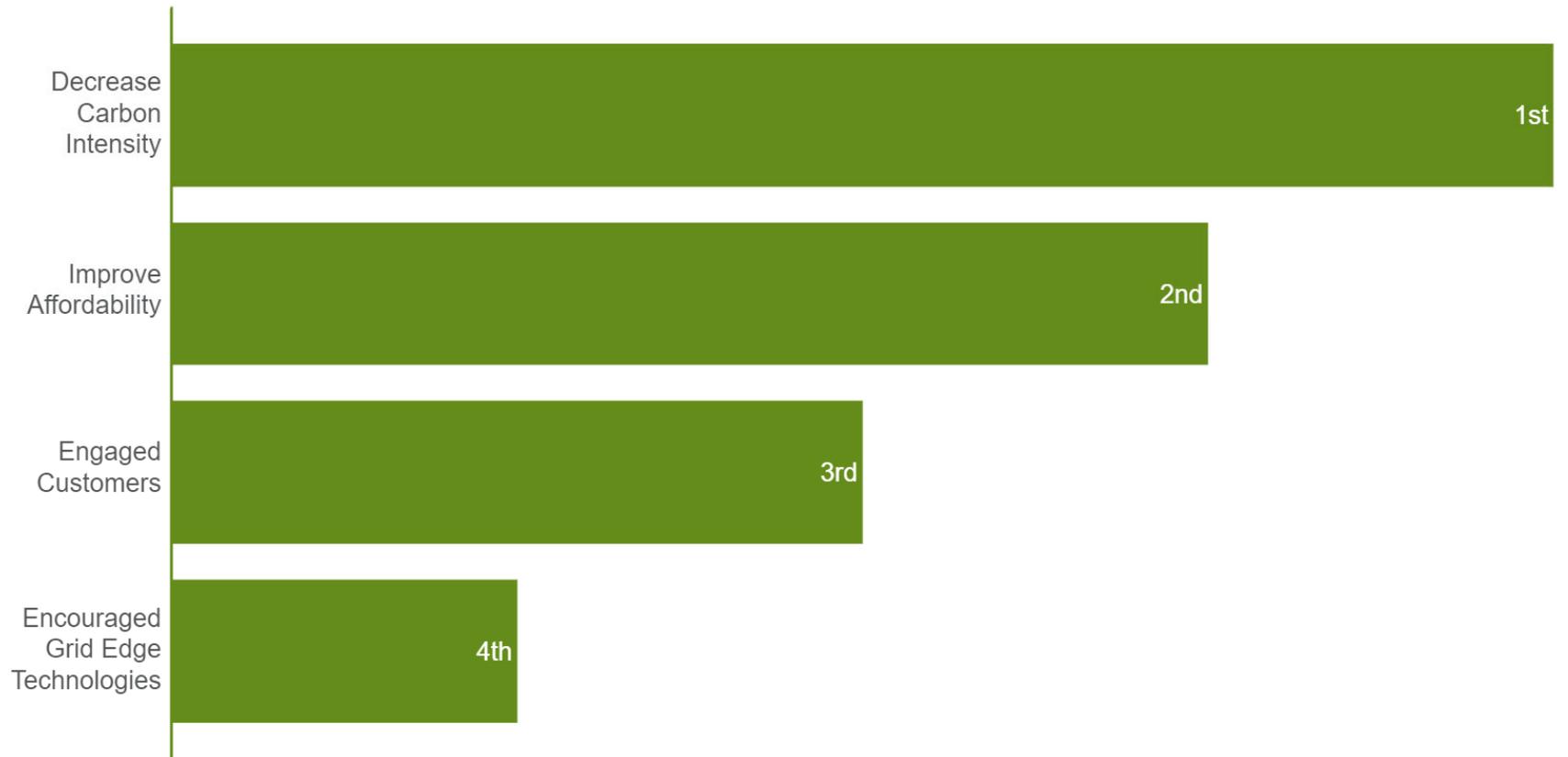
Consolidating Outcomes

Develop clear outcomes from objectives

 Engaged Customers	 Encouraged Grid Edge Technologies	 Improve Affordability	 Decrease Carbon Intensity
 <p><i>Understanding customers' perspectives and levers to drive consumption behaviors</i></p>	 <p><i>Develop pricing option that encourages adoption of technologies that help customer's manage energy use on a daily basis</i></p>	 <p><i>Create market-based price signals directly to customers to encourage changes in behavior consistent with market and grid needs</i></p>	 <p><i>Demonstrate sustained customer response to price signals to leverage dynamic pricing to reduce carbon and meet CA Clean Energy goals</i></p>
 <p><i>Understand risks and rewards from dynamic pricing options for different customer classes</i></p>	 <p><i>Be a clean energy provider for our customers and provide options that meet their needs and are financially viable</i></p>	 <p><i>Develop simple pricing to align customer and company interests and maximize the benefits of dynamic pricing for all stakeholders</i></p>	 <p><i>Enable RTP for both SDG&E and CCA customer with goal of reducing carbon content for supply</i></p>
		 <p><i>Ensure equity among and within customer groups and ensure all customers are provided equal access to the benefits of the pilot</i></p>	
<p>SDG&E offers a Real Time Pricing Pilot Program that allows customers to actively engage in managing their energy bills through behavior changes</p>	<p>SDG&E offers a pilot that encourages customers to adopt new technologies to enhance behavior changes and create advanced opportunities for monetizing DERs</p>	<p>SDG&E designs cost-reflective rates that ensure no cost-shifting and results in increased grid utilization and avoidance of expensive capacity additions</p>	<p>SDG&E offers all customers access to information regarding pricing and carbon levels to enable them to better manage their energy use relative to RTP or TOU pricing schemes</p>

🔒 Poll locked. Responses not accepted.

Ranking Outcomes



Developing Evaluation Principles



Potential Evaluation Principles

Pre and Post Pilot Assessment



Bill Volatility

- What is the impact on customers' bills from the option?
- How volatile could customer bills be given historical price changes?
- How can customers manage the risk of price volatility?



Price Responsiveness

- Do customers respond to daily price signals?
- What were the drivers to achieving consistent and reliable behavior changes?
- How does price responsiveness compare by customer group?



Cost Shift

- What is the cumulative cost to non-participating customers?
- Are there incremental operational and Pilot costs?
- How are benefits delivered to non-participants (lower costs)?



Available Capabilities

- Can SDG&E implement rate design with current systems?
- What customer tools are needed to aid in implementation?
- What is required to fully address capability gaps?



Stakeholder Alignment

- What are stakeholder perspectives regarding the option?
- Is there alignment for design?
- Does design address all stakeholder objectives?



Customer Satisfaction

- Were customers happy with their RTP pilot experience?
- Did the customer know they were enrolled in the RTP pilot?
- Why did a customer unenroll?



Equity & Inclusion

- Was the pilot biased to certain customer groups?
- Did all customer have equal access to the pilot?
- Were any customers 'left behind'?

Next Steps

- SDG&E will work with Guidehouse to consolidate results from today's outcomes.
- Program design pre-read materials will be shared in advance of our next meeting, please be ready to discuss

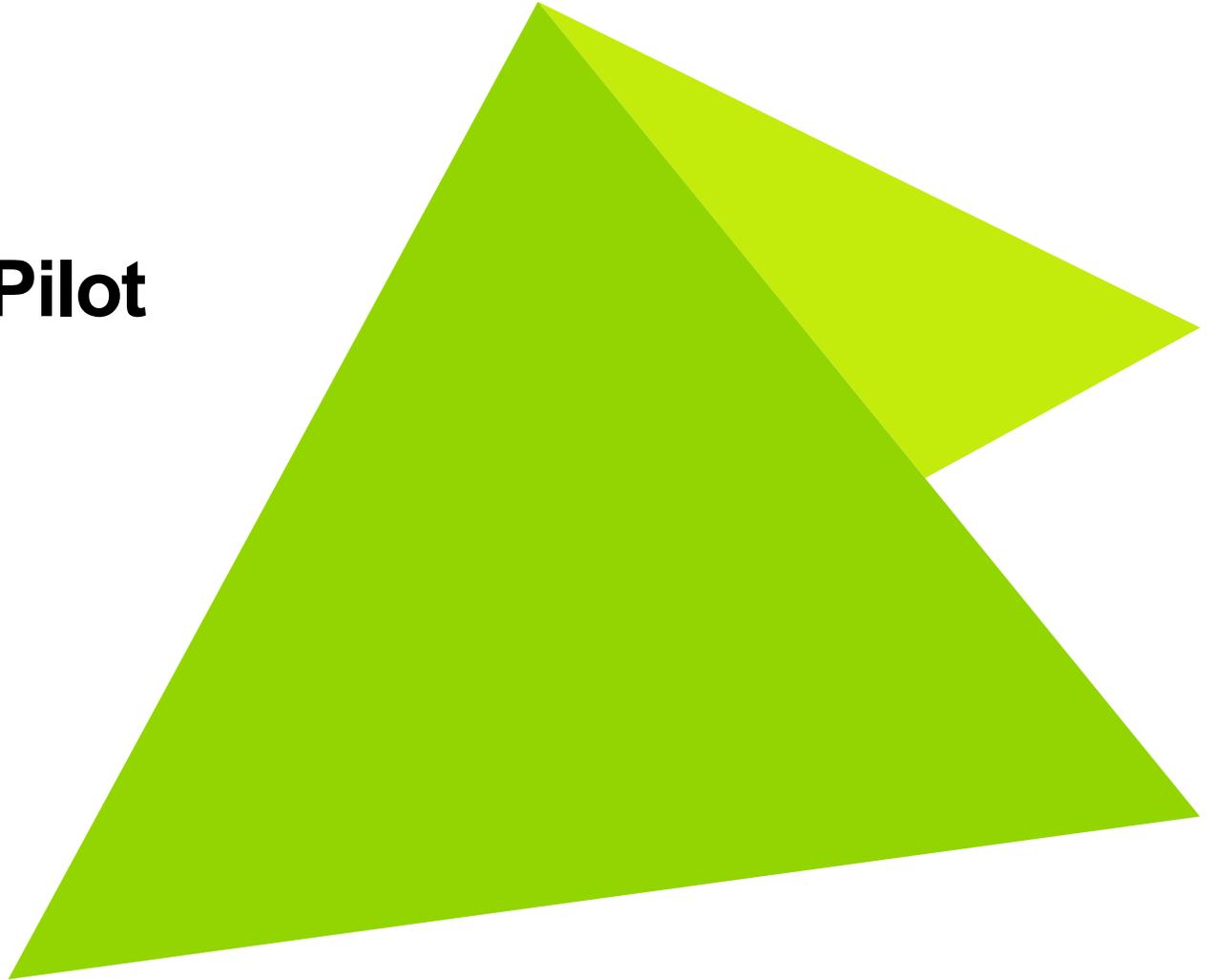
ATTACHMENT B



Real Time Pricing Pilot Stakeholder Workshop #2

San Diego Gas & Electric

October 13, 2021





Agenda

Introduction – Safety Tip, Roll Call, Workshop Objectives	10 Min
Recapping Workshop #1 – Objectives & Desired Outcomes	10 Min
RTP Stage 1 Term Sheet Review	45 Min
Closing Comments & Next Steps	5 Min

Introduction

Safety Tip

Heat Safety

1. Stay hydrated, drink plenty of fluids. Avoid drinks with caffeine or alcohol.
2. Wear loose-fitting, lightweight, light-colored clothing. Avoid dark colors - they absorb the sun's rays.
3. Slow down, stay indoors. Avoid strenuous exercise during the hottest part of the day.
4. Use a buddy system when working in excessive heat. Take frequent breaks if working outdoors.
5. Check on family, friends and neighbors who do not have air conditioning, who spend much of their time alone or who are more likely to be affected by the heat.

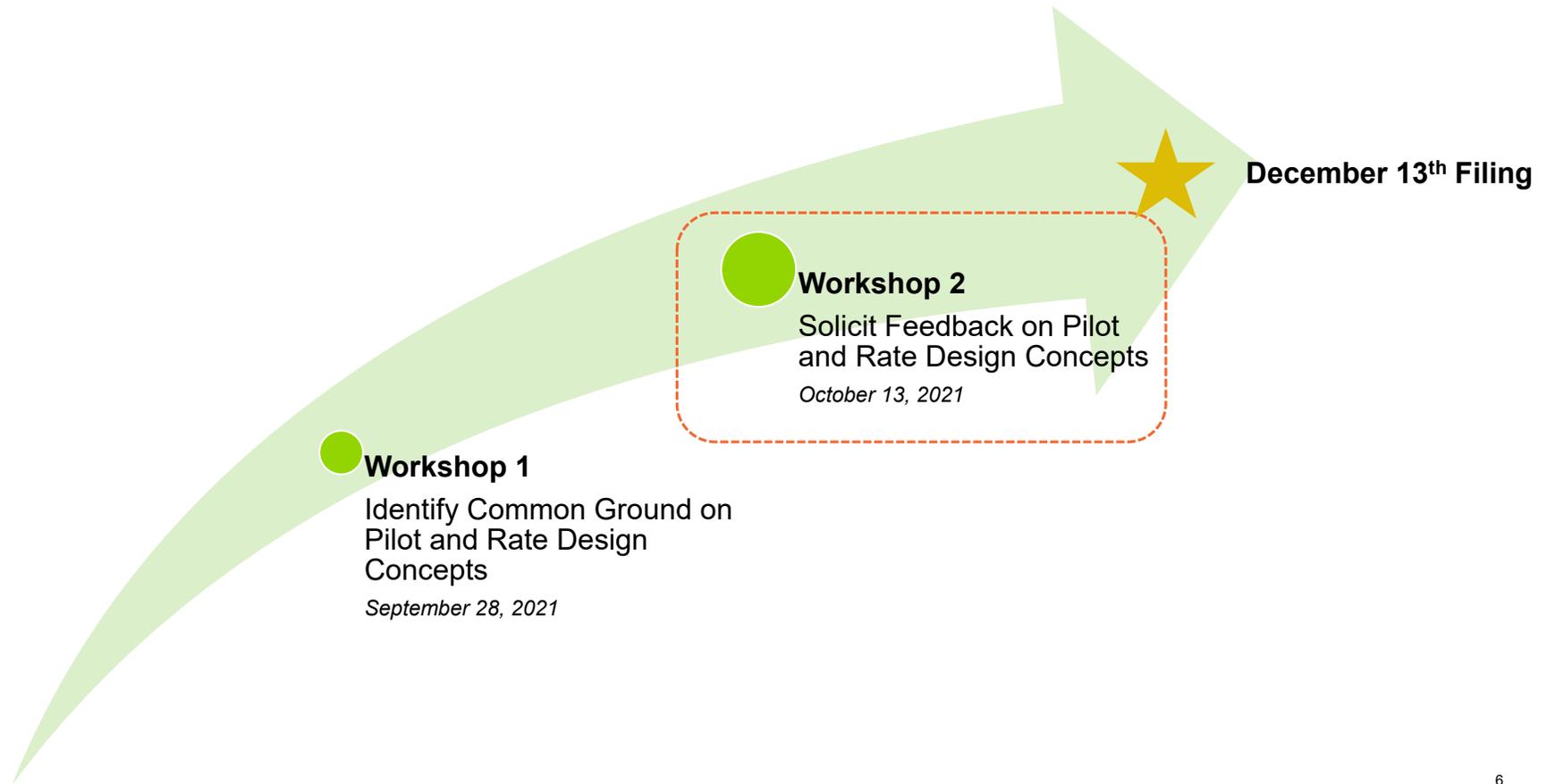


Our goal is to have a very interactive working session

- Please speak up!
- Be candid and honest.
- Minimize distractions as best as possible.
- The term sheet is a **DRAFT** and we are still working on finalizing the pricing and pilot design elements.
- The outcome of this workshop will be critical to designing the RTP pilot program. **Your engagement and feedback today are essential.**
- Anyone can declare ELMO – Enough Let's Move On.

RTP Stakeholder Workshop Timeline

The objective of these workshops is to drive alignment on goals and objectives for real-time pricing (RTP), and to preview pilot program and rate design concepts for feedback.

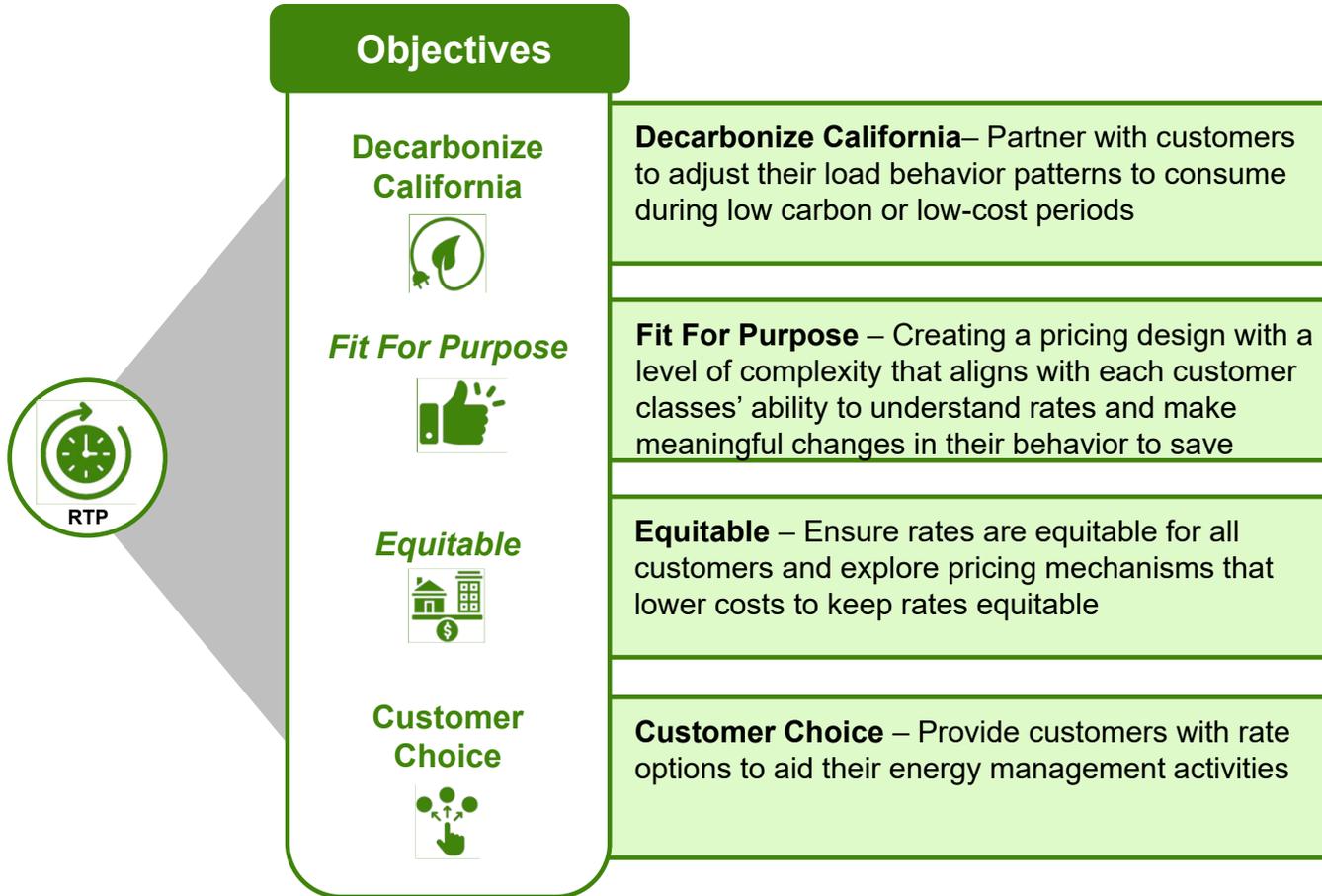


Today's Workshop Structure

- The primary focus of this workshop is to walk through the draft term sheet for Stage 1 of the RTP pilot and gather feedback on key pricing and pilot design components, including:
 - Eligibility
 - Enrollment / Unenrollment
 - Rate Design
 - Proposed Timeline
 - EM&V
 - ME&O

Recap Objectives and Desired Outcomes

Recapping Pilot Objectives



Recapping Desired Outcomes



 Engaged Customers	 Encouraged Grid Edge Technologies	 Improve Affordability	 Decrease Carbon Intensity
 <p><i>Understanding customers' perspectives and levers to drive consumption behaviors</i></p>	 <p><i>Develop pricing option that encourages adoption of technologies that help customer's manage energy use on a daily basis</i></p>	 <p><i>Create market-based price signals directly to customers to encourage changes in behavior consistent with market and grid needs</i></p>	 <p><i>Demonstrate sustained customer response to price signals to leverage dynamic pricing to reduce carbon and meet CA Clean Energy goals</i></p>
 <p><i>Understand risks and rewards from dynamic pricing options for different customer classes</i></p>	 <p><i>Be a clean energy provider for our customers and provide options that meet their needs and are financially viable</i></p>	 <p><i>Develop simple pricing to align customer and company interests and maximize the benefits of dynamic pricing for all stakeholders</i></p>	 <p><i>Enable RTP for both SDG&E and CCA customer with goal of reducing carbon content for supply</i></p>
<p>SDG&E offers a Real Time Pricing Pilot Program that allows customers to actively engage in managing their energy bills through behavior changes</p>	<p>SDG&E offers a pilot that encourages customers to adopt new technologies to enhance behavior changes and create advanced opportunities for monetizing DERs</p>	 <p><i>Ensure equity among and within customer groups and ensure all customers are provided equal access to the benefits of the pilot</i></p> <p>SDG&E designs cost-reflective rates that ensure no cost-shifting and results in increased grid utilization and avoidance of expensive capacity additions</p>	<p>SDG&E offers all customers access to information regarding pricing and carbon levels to enable them to better manage their energy use relative to RTP or TOU pricing schemes</p>

RTP Stage 1 Term Sheet

Eligibility

- Limited to SDG&E M/L C&I customers currently taking Utility Distribution Company (UDC) electric service on Schedules AL-TOU, AL-TOU2, A6-TOU, or DG-R.
- Pilot size limited to 100 customers; the first 100 customers to enroll are eligible
- Customers enrolled on the following current programs are not eligible unless they unenroll:
 - Net-Energy-Metering (NEM)
 - Community Choice Aggregation (CCA) / Direct Access (DA)
 - Customers on grandfathered rates will forfeit their grandfathered rate by enrolling in RTP (if they unenroll in the RTP Pilot, the customer reverts to existing rate structures and not their previous grandfathered rate)
 - Any SDG&E-offered Demand Response (DR) program, including the default Critical Peak Pricing program (customers may unenroll in favor of RTP pilot tariff)
- Stage 2 will include additional customer classes once SDG&E has completed customer research to determine interest in the program; the size of the Stage 2 pilot will also be dependent on CCA participation

Enrollment

- Optional program:
 - Customer chooses to enroll in the pilot (Opt-In)
 - Customer may unenroll from pilot at any time subject to unenrollment requirements
 - Customer must have interval meter and at least one year of pre-enrollment hourly use data
- 2-year pilot program period as follows:
 - Pre-enrollment begins 10/1/2022
 - Pilot begins 11/1/2022, with customers enrolled in “pre-enrollment” period placed on RTP pilot rate for the first billing period after 11/1/2022
 - For enrollment after 11/1/2022, pricing starts at the beginning of the customer’s next billing period after day of enrollment
 - No additional enrollment after 10/31/2023
 - Pilot terminated 10/31/2024; customers will either be automatically put on the standard rate for the customer’s class or a rate option chosen by customer (e.g., if RTP Stage 2 tariff option is available, customer may “Opt In” to the new rate option)

Unenrollment

- Customer choosing to unenroll in program must request switching no later than five-business days prior to the end of the customer's billing period.
- If the customer is not able to meet the five-business day deadline, the customer will be unenrolled at the beginning of their next billing period.
- If the customer meets the five-business day deadline, the customer will be unenrolled on the day or future date, and not retroactively to the beginning of the current billing period.
- Upon unenrollment, customer reverts to existing default rate structures or a current rate option available to that customer's class.
- If a customer switches to a CCA or DA, they will no longer be able to participate in the SDG&E Stage 1 pilot.

Rate Design

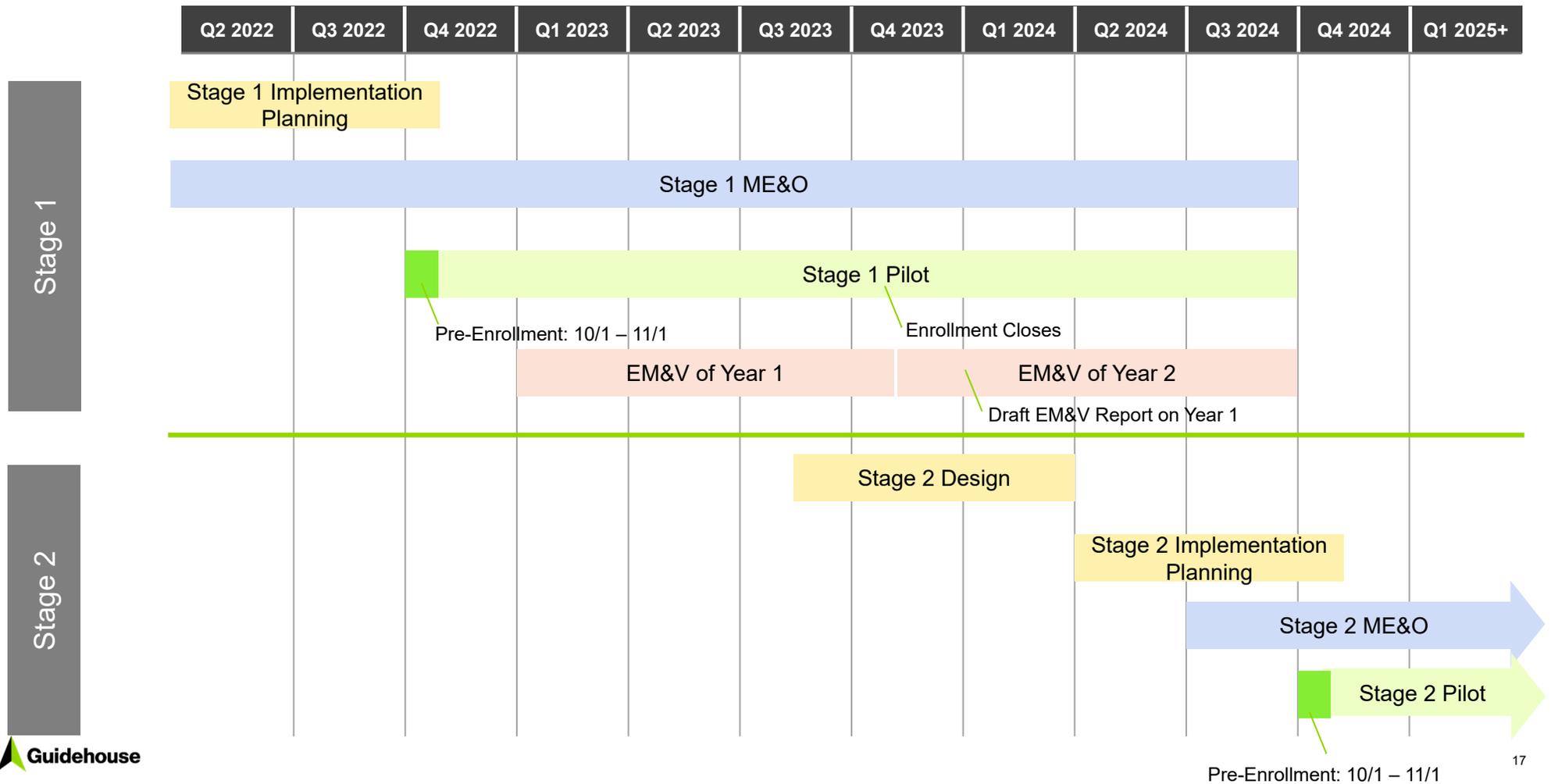
- The proposed rate design for Stage 1 includes a new “Commodity Rate” in SDG&E’s commodity tariff as well as the applicable UDC rate based on customer class

Commodity Rate Component	Benefits
Volumetric energy rate based on Day Ahead CAISO hourly price	<ul style="list-style-type: none"> • Most energy costs are cleared in the DA market; greatest share of SDG&E costs are from the DA market • DA posting provides customers with time to respond • Simpler for customers to understand
Additional volumetric capacity rate will be the Schedule VGI day-ahead CPP hourly adder	<ul style="list-style-type: none"> • Adder based on top 150 system peak hours • Methodology and implementation is already in place
Volumetric rate equal to the Commodity Base Rate in Schedule VGI	<ul style="list-style-type: none"> • Methodology and implementation is already in place

Key Program Parameters

- SDG&E will leverage the pricing “Portal” web-based tool used in VGI rate
- SDG&E will post the day ahead RTP prices for each hour by 6 p.m.
- Customers will self-serve and pull pricing from SDG&E’s “Portal”.
- If Day Ahead prices are not available by 6 p.m. on the day before rates are in effect, the previous day’s pricing will be applied.

Proposed Timeline



EM&V

SDG&E will perform an ex-post impact and process evaluation of the Stage 1 pilot and conduct a regression analysis for load impacts. The process evaluation results will be used for modifications of program design and feed into Stage 2. The evaluation will include:

- Load change quantification and impact of technology on load shift
 - Compare pre to post load consumption, adjusted for weather if applicable.
 - SDG&E may conduct customer interviews to determine how the customer may have changed their behavior or invested in technology to change load patterns and usage levels.
- Bill savings quantification
 - SDG&E will compare customer bills on the RTP pilot to their bills on their previous rate
- Avoided Costs quantification
 - The costs avoided by SDG&E due to change in customer energy and demand use after enrollment will be estimated using the Impact Estimation Approaches in the Avoided Cost Calculator
 - Avoided costs used will be based on SDG&E's latest approved avoided costs

EM&V (Continued)

- Process review (customer understanding and satisfaction)
 - SDG&E may conduct customer interviews to gain insights on the customer's pilot experience and reasons for enrolling
 - SDG&E will interview any customer who unenrolls to gain insights on reasons for unenrollment
- Cost shift quantification and carbon reduction quantification
 - SDG&E will calculate the cost shift by participating customer and into total for the pilot as part of the EM&V
 - Cost shift will be quantified as the difference in revenue collected from the customer under the RTP tariff versus the customer's previous tariff less the benefits of cost and carbon reduction from the 'impact estimation'

ME&O

- SDG&E will provide third parties with resources and collateral to facilitate their promotion of the RTP pilot rate within their programs.
- SDG&E will also provide low-cost outreach to promote awareness (email, bill inserts, website, etc.).
- In the event the Commission determines there is need for a sole source ME&O provider, SDG&E will conduct an RFP to determine the appropriate provider.
- The costs and schedule of this process are unknown.
- SDG&E will also develop a website for the RTP pilot and coordinate with key account leads to educate eligible C&I customers on the pilot option.

Next Steps

- SDG&E will work to refine the RTP pilot term sheet based on the feedback received today
- Feedback received today will also be used to guide high-level design considerations of Stage 2 design

Requirements for Pilot Design

Pilot Design must address the following:

 RTP Pricing Design	
Element	Description
1	Recommendation for rate design based on either 15-minute real-time price or day-ahead hourly price recommended with supporting information and data supporting the recommendation
2	Mechanisms, such as a capacity adder, to recover stranded costs be structured. Should consider three to four different peak TOU prices and an hourly capacity adder.
3	Recommendation on whether an iterative capacity adder design versus a simple design is needed and address how Pilot Stage 1 design will inform the design of the capacity adder in the Pilot Stage 2.
4	The application should include information, data, and modeling to show the potential impact of transmission rate time differentiation on the RTP pilot rates, to include a comparison of the proposed pilot rate design with current transmission rate structure and with time-differentiated transmission rates.

 RTP Pilot Program Design	
Element	Description
5	Participation targets by class and any Pilot Stage 1 caps
6	Eligibility for both Stage 1 and 2 to include addressing how to avoid double-counting, such as preventing enrollment from customers enrolled in the RTP-based dynamic rate from dual-participating in another market-integrated, supply-side demand response pilot program.
7	Address the feasibility of and the barriers for an application programming interface (API) to transmit price signals
8	Detailed evaluation plan for Stage 1, and a proposed evaluation plan for Stage 2, to include items set forth in Section 5.6 of decision.
9	The application should include a proposed process for a working group to facilitate development of the Pilot Stage 2, including final design elements and evaluation criteria.
10	The application should include a proposed timeline and scheduling worksheet (such as a Gantt chart) for both stages of the pilot, including proposed pilot duration.
11	The application should include a proposed duration for each stage of the pilot. For Pilot Stage 1, the application may also include a proposal for a summertime only RTP pilot.

Potential Evaluation Principles

Pre and Post Pilot Assessment



Bill Volatility

- What is the impact on customers' bills from the option?
- How volatile could customer bills be given historical price changes?
- How can customers manage the risk of price volatility?



Price Responsiveness

- Do customers respond to daily price signals?
- What were the drivers to achieving consistent and reliable behavior changes?
- How does price responsiveness compare by customer group?



Cost Shift

- What is the cumulative cost to non-participating customers?
- Are there incremental operational and Pilot costs?
- How are benefits delivered to non-participants (lower costs)?



Available Capabilities

- Can SDG&E implement rate design with current systems?
- What customer tools are needed to aid in implementation?
- What is required to fully address capability gaps?



Stakeholder Alignment

- What are stakeholder perspectives regarding the option?
- Is there alignment for design?
- Does design address all stakeholder objectives?



Customer Satisfaction

- Were customers happy with their RTP pilot experience?
- Did the customer know they were enrolled in the RTP pilot?
- Why did a customer unenroll?



Equity & Inclusion

- Was the pilot biased to certain customer groups?
- Did all customer have equal access to the pilot?
- Were any customers 'left behind'?