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PACIFIC GAS AND ELECTRIC COMPANY

2023 GENERAL RATE CASE PHASE II

ERRATA TO PREPARED TESTIMONY

EXHIBIT (PG&E-6)

**PG&E'S TESTIMONY SUPPORTING STOP-GAP INTERIM RTP PILOTS
EXTENSION PROPOSAL**

(CLEAN VERSION)



PACIFIC GAS AND ELECTRIC COMPANY
 2023 GENERAL RATE CASE PHASE II
 ERRATA TO PREPARED TESTIMONY
 EXHIBIT (PG&E-6)
 PG&E'S TESTIMONY SUPPORTING STOP-GAP INTERIM RTP PILOTS
 EXTENSION PROPOSAL

TABLE OF CONTENTS

Chapter	Title	Witness
1	POLICY BACKGROUND AND ORGANIZATION OF TESTIMONY	Melanie Jean McCutchan
2	OVERVIEW OF PG&E'S STOP GAP HFP PILOT EXTENSION PROPOSAL	Neda Assadi Andrew Au Amitava Dhar Tysen F. Streib Oriana Tiell
3	STOP GAP RATE DESIGN	Amitava Dhar Tysen F. Streib
4	DUAL PARTICIPATION	Neda Assadi
5	EXTENDED HFP PILOT IMPLEMENTATION	Andrew Au
6	MARKETING, EDUCATION, AND OUTREACH	Jamie Chesler
7	MEASUREMENT AND EVALUATION	Jahon Amirebrahimi
8	COST RECOVERY	Rebecca Madsen
Appendix A	STATEMENT(S) OF QUALIFICATIONS	Jahon Amirebrahimi Neda Assadi Andrew Au Jamie Chesler Amitava Dhar Rebecca Madsen Melanie Jean McCutchan Tysen F. Streib Oriana Tiell

PACIFIC GAS AND ELECTRIC COMPANY

CHAPTER 1

POLICY BACKGROUND AND ORGANIZATION OF TESTIMONY

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 1
POLICY BACKGROUND AND ORGANIZATION OF TESTIMONY

TABLE OF CONTENTS

A. Policy and Regulatory Background.....	1-3
1. CPUC's Demand Flexibility Rulemaking	1-3
a. PG&E's HFP Pilots	1-4
b. Phase 2 of the VGI Pilot	1-5
2. The CEC's Load Management Standards.....	1-6
3. The Enhanced Demand Response Flexibility Rulemaking.....	1-7
B. Organization of the Testimony and Witness Responsibilities	1-8

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 1
POLICY BACKGROUND AND ORGANIZATION OF TESTIMONY

Pacific Gas and Electric Company (PG&E) presents this Supplemental Testimony, *PG&E's Testimony Supporting Stop-Gap Interim RTP Pilots Extension Proposal* (Testimony), in its 2023 General Rate Case Phase II (GRC II) Application (A.) 24-09-014,¹ pursuant to the schedule in *Administrative Law Judge's Ruling Setting Schedule for the Dynamic Rate Options Track* (ALJ Dynamic Rate Schedule Ruling), issued January 7, 2026. This ruling was issued in response to a motion filed by PG&E on November 6, 2025,² which proposed that the California Public Utilities Commission (CPUC, or the Commission) adopt a two-step schedule for considering next iterations and implementation steps with regard to PG&E's dynamic Real-Time Pricing (RTP) rate offerings.³ The two steps were: (1) a "Stop Gap" extension of existing Hourly Flex Pricing (HFP) pilots and (2) longer term, post-pilot dynamic rates. PG&E's motion was made in response to the schedule set in *Administrative Law Judge's Ruling Modifying Schedule and Setting a New Track for Dynamic Rate Options*, issued October 9, 2025 in A.24-09-014. This ruling established a bifurcated track in PG&E's A.24-09-014 to consider PG&E's Supplemental Testimony on dynamic rate options.

The ALJ Dynamic Rate Schedule Ruling set a schedule for PG&E to submit testimony on the Stop Gap extension of HFP pilots by June 8, 2026, but did not set a

¹ 2023 GRC II, Prepared Testimony, Exhibit (PG&E-3), Chapter 10, Real-Time Pricing and Load Management Standard Requirements.

² 2023 GRC II, Motion of Pacific Gas and Electric Company (PG&E) to Adopt a Schedule for the Bifurcated Real-Time Pricing Track of PG&E's General Rate Case Phase II (Nov. 6, 2025).

³ Please note that PG&E named the pilots authorized by D.24-01-032 the "Hourly Flex Pricing (HFP) Pilots" and we will refer to them as such in this Testimony. We will use the term "HFP" to refer to the pricing structure associated with PG&E's pilots, but will use the term "RTP" when referring more generally to hourly dynamic day-ahead rates. What PG&E is terming "RTP rates" have also been referred to as "Dynamic Rates" and "Demand Flexibility (DF) Rates" (R.22-07-005) in the context of the California Public Utilities Commission's (CPUC or Commission) Demand Flexibility (DFOIR) Rulemaking and as "marginal cost-based rates" in the context of the California Energy Commission's (CEC) Load Management Standards.

1 schedule for PG&E's proposal for a longer-term post-pilot rate. The ruling stated
2 that:

3 Post-pilot dynamic rate options can be timely and appropriately addressed in
4 a separate application following the conclusion of this proceeding or in the
5 next rate design proceeding.⁴

6 This Testimony is responsive to the ALJ Dynamic Rate Schedule Ruling's
7 directive to submit a Stop Gap proposal to extend the HFP pilots and to CPUC
8 Decision (D.) 25-08-049 in Rulemaking (R.) 22-07-005, the Demand Flexibility
9 Rulemaking (DFOIR). D.25-08-049 ordered PG&E to serve supplemental testimony
10 in Application (A.) 24-09-014, with a showing that is cognizant of the California
11 Energy Commission (CEC)'s Load Management Standard (LMS) guidance on RTP
12 rate design.⁵

13 PG&E presents in this Testimony its proposal for a Stop Gap extension of
14 PG&E's HFP pilots from 2028 through 2031, consistent with CPUC directives and
15 the CEC LMS guidance to make RTP rates available to customers by January 1,
16 2027, and continuing thereafter.⁶ PG&E requests this extension of the HFP pilots
17 until RTP rates can be built in PG&E's modernized billing system. There is
18 considerable uncertainty in that timing, especially given that PG&E's proposal and
19 funding request to modernize PG&E's billing system is still pending before the CPUC
20 as part of PG&E's Billing Modernization Initiative (BMI) in A.24-10-014. The
21 rationale behind PG&E's request to extend the HFP pilots over the years 2028 to
22 2031 is further detailed in Chapter 2 (Overview of Proposal), Section D of this
23 Testimony.

24 In Section A of this introductory chapter, we provide background on the
25 regulatory context for PG&E's proposal to extend its HFP pilots, including, with that
26 extension, consolidating the HFP pilot with Phase 2 of the Vehicle-to-Grid Integration

4 2023 GRC II, Administrative Law Judge's Ruling Setting Schedule for the Dynamic Rate Options Track (Jan. 7, 2026), p. 3.

5 D.25-08-049, p. 146, Ordering Paragraph (OP) 3.

6 California Public Resources Code, § 25403.5 and California Code of Regulations (CCR), Tit. 20, § 1623(d)(2).

(VGI)⁷ pilots. PG&E then, in Section B of this chapter, provides an overview of PG&E’s “Stop Gap HFP Extension Proposal” (Stop Gap Proposal) Testimony and describes what is covered in each chapter.

A. Policy and Regulatory Background

RTP rates have been considered across a number of separate CPUC regulatory proceedings, not only in ratemaking proceedings, but also in rulemakings related to reliability, transportation electrification, and demand response. Concurrent to these CPUC rulemakings, in its LMS Rulemaking,⁸ the CEC has presented its guidance related to future RTP rates, while recognizing that the CPUC holds the ratemaking authority for the investor-owned utilities (IOU).⁹

1. CPUC’s Demand Flexibility Rulemaking

In July 2022, the CPUC opened the DFOIR. This rulemaking sought to establish widespread demand flexibility through electric rates to advance the following objectives:

(a) enhance the reliability of California’s electric system; (b) make electric bills more affordable and equitable; (c) reduce the curtailment of renewable energy and greenhouse gas emissions associated with meeting the state’s future system load; (d) enable widespread electrification of buildings and transportation to meet the state’s climate

⁷ VGI encompasses both V1G and V2X applications. V1G refers to unidirectional managed charging, where electric vehicle charging from the grid is shifted in time, location or charging level (i.e., power draw). V2X (Vehicle-to-Everything) is a term that encompasses bidirectional applications in which power can flow back from the vehicle to a home (V2H), business (V2B), specific stand-alone load (V2L), or the grid (V2G). V2H (Vehicle-to-Home) refers to energy discharged from a vehicle to a home that does not flow beyond a customer’s primary electricity meter. V2B (Vehicle-to-Building) refers to energy discharged to a building (typically commercial) that does not flow beyond a customer’s primary meter. V2L (Vehicle-to-Load) refers to energy discharged from a vehicle that provides power to a standalone load (e.g., appliances). V2G (Vehicle-to-Grid) refers to energy discharged from a vehicle that may flow beyond the customer’s primary electricity meter onto the electric grid.

⁸ The LMS regulations are contained in the CCR, Tit. 20, §§ 1621-1625, under the CEC’s authority to establish programs that reduce peak electricity demand, help balance electricity supply and demand to support grid reliability and provide clean and affordable electricity services to Californians. The current LMS standards result from amendments to the LMS in support of a carbon-free grid as envisioned by Senate Bill (SB) 100 (De León, 2018). (Initial Statement of Reasons, CEC Docket No. 21-OIR-03, Notice Published on Dec. 24, 2021.)

⁹ 20 CCR, § 1623(a).

goals; (e) reduce long-term system costs through more efficient pricing of electricity; and (f) enable participation in demand flexibility by both bundled and unbundled customers.¹⁰

A CPUC staff whitepaper¹¹ and a working group established through the CPUC's DFOIR Track B¹² presented and deliberated considerations for RTP rate design, which informed the Commission's DFOIR Track B Final Decision on dynamic rate design issued in August 2025, D.25-08-049.¹³ The prior year, in that same proceeding, the CPUC issued D.24-01-032, to direct PG&E and SCE to implement "expanded" RTP pilots to address reliability concerns.¹⁴ These pilots expanded upon earlier RTP pilots that had been approved in prior proceedings, as discussed below. Please note that, in this Stop Gap HFP Extension Proposal, PG&E will also at times reference testimony that was submitted on October 29, 2025 in response to D.25-08-049 as part of PG&E GRC II A.24-09-014.¹⁵ This testimony included discussion of PG&E's post-pilot RTP rate proposal that is relevant to PG&E's Stop Gap Proposal presented here.

a. PG&E's HFP Pilots

D.24-01-032 directed PG&E to expand pilots that had been previously approved as part of the CPUC's Summer Reliability proceeding (R.20-11-003). In the Summer Reliability Rulemaking, the Commission issued D.21-12-015 to authorize two pilots to encourage load management through RTP rates: (1) the Agricultural Flexible Irrigation Technology (AgFIT) Pilot proposed by Valley Clean Energy

¹⁰ R.22-07-005, *Order Instituting Rulemaking to Advance Demand Flexibility Through Electric Rates* (July 14, 2022), p. 1.

¹¹ R.22-07-005, CPUC, Energy Division, *Advanced Strategies for Demand Flexibility Management and Customer DER Compensation* (June 22, 2022) 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> (accessed May 26, 2026).

¹² R.22-07-005, Track B Working Group Report (October 11, 2023).

¹³ D.25-08-049, Decision Adopting Guidelines for PG&E, SCE, and SDG&E on Demand Flexibility Rate Design Proposals.

¹⁴ D.24-01-032, p. 2.

¹⁵ PG&E 2023 GRC II Supplemental Testimony, Exhibit (PG&E-5), Real-Time Pricing Proposal (October 29, 2025).

(VCE), a Community Choice Aggregator (CCA) in PG&E's service area (VCE AgFIT Pilot)¹⁶ and (2) an RTP pilot for residential and commercial and industrial (C&I) customers in SCE's service area (SCE Dynamic Rate Pilot).¹⁷ D.24-01-032 authorized expanding these RTP rate pilots in PG&E's and SCE's service areas.¹⁸ PG&E named its "Expanded Pilots" the Hourly Flex Pricing (HFP Pilots). For PG&E, the Commission required an agricultural pilot built upon the VCE AgFIT Pilot for PG&E's entire service area (HFP Pilot 1) and also created a new pilot for residential and C&I customers (HFP Pilot 2).¹⁹ These pilots were authorized to extend until the end of 2027 and are available to PG&E's bundled customers and to CCA customers whose CCA elects to participate.

In Advice Letter (AL) E-7222, as well as Supplemental ALs 7222-E-A and AL 7222-E-B,²⁰ PG&E proposed implementation plans for HFP Pilots 1 and 2. Those ALs were approved in September 2024. PG&E's HFP Pilots, each with an enrollment target of 50 MW, began enrolling customers in November 2024.

b. Phase 2 of the VGI Pilot

SB 676 (Bradford, 2019) ordered PG&E and the state's other large IOUs to develop measures to achieve VGI load enrollment targets outlined in the bill. In R.18-12-006, the Development of Rates and Infrastructure for Vehicle Electrification Rulemaking, the CPUC issued D.20-12-029, which encouraged PG&E and the other large IOUs to submit pilot proposals to support VGI.²¹ PG&E proposed VGI Pilots in AL 6259-E.

¹⁶ D.21-12-015, p. 89.

¹⁷ *Id.*, p. 96.

¹⁸ D.24-01-032, p. 83, OP 1. SCE's Expanded Pilot is also known as "The [SCE] Flexible Pricing Rate Pilot."

¹⁹ D.24-01-032, p. 21.

²⁰ AL 7222-E, PG&E Implementation Plans for PG&E's Agricultural Pilot and Expanded Pilot 2 (submitted Mar. 25, 2024).

²¹ D.20-12-029, p. 43.

Three VGI pilots were subsequently authorized by CPUC Resolution (Res.) E-5192 (May 2022): VGI Pilot 1 for residential customers, VGI Pilot 2 for commercial customers, and VGI Pilot 3 for microgrids. Phase 1 of the VGI pilots is focused on testing Vehicle-to-Home (V2H) and Vehicle-to-Building (V2B) backup power capabilities. Res.E-5192 directed PG&E to file a subsequent advice letter to propose dynamic rate structures for VGI Pilots 1 and 2.²² In Res.E-5326 (July 2024), the CPUC approved the final RTP rate structures for this “Phase 2” of the VGI pilots that included RTP rate structures.²³ Phase 2 expanded the scope to Vehicle-to-Grid (V2G) use cases. In Phase 2 of the residential VGI Pilot (VGI Pilot 1) and Phase 2 of the commercial VGI Pilot (VGI Pilot 2), V2G participants are required to enroll in an RTP rate with day-ahead hourly generation and distribution cost components, subject to their respective CCA’s participation.²⁴ Phase 2 of the VGI pilots was launched in October of 2024.

2. The CEC’s Load Management Standards

The CEC adopted its final LMS amendments in October 2022, which went into effect in April 2023.²⁵ The CEC’s LMS require the large IOUs, CCAs, and Publicly-Owned Utilities (POUs) to propose optional hourly “Marginal Cost-Based Rates” (RTP rates) for all customer classes, which, in the case of the IOUs, require approval by the CPUC before becoming effective.²⁶ Under the CEC’s LMS guidance, compliant LMS marginal cost-based hourly rates needed to be presented to each utility’s respective

²² Res. E-5192, p. 45, OP 5.

²³ Res. E-5326, pp. 9-12.

²⁴ PG&E AL 6694-E, pp. 2-13.

²⁵ The LMS regulations are contained in the CCR, Title 20, §§ 1621-1625, and carry out the CEC’s statutory mandate to establish utility programs that reduce peak electricity demand, help balance electricity supply and demand to support grid reliability and provide clean and affordable electricity services to Californians. The CEC proposed these amendments to the LMS to expand utility incentive programs to more effectively shift loads to periods of high renewable generation, in support of a carbon-free grid as envisioned by SB 100 (De León, 2018). (Initial Statement of Reasons, CEC Docket No. 21-OIR-03, Notice Published on Dec. 24, 2021.)

²⁶ 20 CCR, § 1623(a)(1). Streetlighting customers are not included.

rate-approving body by January 1, 2025²⁷ with a target for making any new rates available to customers on an opt-in basis across all customer classes by January 1, 2027. However, offering such rates is contingent on approval of the rates and cost recovery by each utility’s respective rate-approving body—which, in the case of PG&E, SCE and SDG&E—is the CPUC.²⁸

PG&E submitted its testimony on RTP rate design in September 2024 to the CPUC as part of our 2023 GRC Ph II A.24-09-014. This was later followed by Supplemental Testimony in October 2025 pursuant to CPUC directive in D.25-08-049 as part of the DFOIR.²⁹ While a longer-term “post-pilot” RTP rate design and deployment approach will be developed through subsequent PG&E rate proceedings before the Commission, PG&E seeks to extend the HFP pilots—and incorporate into the HFP pilots the population served by Phase 2 of PG&E’s VGI Pilot—to continue to make RTP rates available to customers by and after January 1, 2027, in consideration of the timing provisions in the LMS. This is needed because PG&E will not be ready to deploy post-pilot RTP rates until after 2031, and the current HFP pilots are set to end on December 31, 2027.

3. The Enhanced Demand Response Flexibility Rulemaking

On September 29, 2025, the CPUC issued a new Enhanced Demand Response Order Instituting Rulemaking R.25-09-004 (EDROIR), which seeks to “evaluate and enhance the consistency, predictability, reliability, and cost-effectiveness of demand response resources.”³⁰ The preliminary EDROIR indicates that considerations of load response from “economic

²⁷ 20 CCR, § 1623(a)(2). See also: CPUC staff submission, LMS Docket 23-LMS-01 (June 8, 2023), *Load Management Standards Compliance Timeline*. Large CCAs and POUs are subject to a comparable requirement but have different time deadlines than the IOUs. The deadline for Large POUs to apply to their rate-approving bodies for approval of at least one marginal cost-based rate was April 1, 2025, and for Large CCAs was July 1, 2025.

²⁸ 20 CCR, § 1623(d)(2).

²⁹ D.25-08-049, p. 146, OP 3.

³⁰ R.25-09-004, *Order Instituting Rulemaking to Enhance Demand Response in California* (Sept. 29, 2025), p. 1.

signals” in the form of “prices” should be in scope of the EDROIR.³¹ The EDROIR included the following in scope:

What standardized data systems, communication protocols, and data transfer processes should the Commission adopt or amend to support demand response, including supply side demand response initiatives [and dynamic rates, with consideration of cost/benefits tradeoffs]?³²

This “systems and processes” scope had originally been in the scope of the DFOIR Track B (R.22-07-005). The IOUs and other parties, including the CPUC’s Energy Division, presented proposals for RTP systems and processes in the DFOIR Track B Working Group Report 2,³³ and in a series of public workshops with various stakeholders. However, D.25-08-049, the DFOIR Track B Decision, did not provide guidance on systems and processes and said that supporting systems for dynamic rates would be covered in a forthcoming rulemaking. This scope appears to have now been incorporated into the EDROIR, which PG&E supports.³⁴ PG&E recognizes that the EDROIR Rulemaking could provide guidance on systems and processes (as well as dual participation in RTP and Demand Response programs) that may affect implementation of PG&E’s future RTP offerings. Any possible cost impacts on future RTP implementation related to potential EDROIR guidance or requirements would need to be addressed by the CPUC in a timely fashion for utility cost recovery.

B. Organization of the Testimony and Witness Responsibilities

This Testimony outlines PG&E’s proposal to extend its current HFP pilots from 2028-2031. To ground the reader in PG&E’s current RTP pilots, PG&E provides a status update on PG&E’s current HFP pilots and Phase 2 of the VGI

³¹ *Ibid.*, See also D.17-12-003, p. 3.

³² R.25-09-004, *Order Instituting Rulemaking to Enhance Demand Response in California* (Sept. 29, 2025), p. 10.

³³ R.22-07-005, CPUC, DFOIR, Track B Working Group Report (Oct.11, 2023).

³⁴ R.25-09-004, *Order Instituting Rulemaking to Enhance Demand Response in California* (Sept. 29, 2025), p. 8, “In Decision 25-08-049, the Commission noted that issues relating to systems and processes to enable access to dynamic rates to implement Load Management Standards will be addressed in one or more new rulemakings. This rulemaking will address the implementation of dynamic rates by developing the appropriate systems and processes but will not address the rate design aspects of the dynamic rates being used by these systems and processes.”

1 pilots in Chapter 2, Section B, and in Section C, outlines the current customer
 2 experience in those pilots. In that same chapter in Section D, we detail the
 3 timing considerations underlying the Stop Gap HFP Extension Proposal. In
 4 Chapter 2, Section E, we then discuss learnings from the current pilots, and
 5 previous RTP pilots authorized by the CPUC and describe the Stop Gap HFP
 6 Extension Proposal that was informed by those learnings. In Chapter 2,
 7 Section F, we provide high-level cost estimates for the Stop Gap Proposal.
 8 Finally in Chapter 2, Section G, PG&E lists the key elements of PG&E's Stop
 9 Gap HFP Extension Proposal for which PG&E is seeking approval.

10 Subsequent chapters provide more detail around various elements of the
 11 proposal. Chapter 3 details proposed changes to HFP rate design for the Stop
 12 Gap HFP Extension Proposal. Chapter 4 discusses proposed changes to rules
 13 for allowing dual participation on HFP and Demand Response programs.
 14 Chapter 5 describes the implementation activities and cost estimates that inform
 15 PG&E's funding request. Chapter 6 describes Marketing, Education and
 16 Outreach activities and costs needed to support the Stop Gap Proposal.
 17 Proposed Measurement and Evaluation activities and costs are described in
 18 Chapter 7. Finally, in Chapter 8, PG&E discusses its proposed approach to cost
 19 recovery for the Stop Gap HFP Extension Proposal.

20 The Witness assignments for each chapter are as follows:

- 21 • Chapter 1: Policy Background and Organization of Testimony – Melanie
 22 McCutchan;
- 23 • Chapter 2: Overview of PG&E's Stop Gap HFP Pilot Extension Proposal –
 24 Andrew Au, Amitava Dhar, Tysen Streib, Neda Assadi, Oriana Tiell;
- 25 • Chapter 3: Stop Gap Rate Design – Tysen Streib, Amitava Dhar;
- 26 • Chapter 4: Dual Participation – Neda Assadi;
- 27 • Chapter 5: Extended HFP Pilot Implementation – Andrew Au;
- 28 • Chapter 6: Marketing, Education, and Outreach – Jamie Chesler;
- 29 • Chapter 7: Measurement and Evaluation – Jahon Amirebrahimi; and
- 30 • Chapter 8: Cost Recovery – Rebecca Madsen.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 2
OVERVIEW OF
PG&E'S STOP GAP HFP PILOT EXTENSION PROPOSAL

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 2
OVERVIEW OF
PG&E'S STOP GAP HFP PILOT EXTENSION PROPOSAL

TABLE OF CONTENTS

A. Introduction.....	2-1
B. Current Status of the HFP Pilots, Phase 2 of the VGI Pilots.....	2-3
1. Enrollment Status.....	2-3
2. Community Choice Aggregator and ASP Engagement.....	2-4
3. Price Signals on the Current HFP and VGI Pilots	2-5
C. Customer Experience on the HFP and VGI Pilots	2-7
1. How Customers Receive Information About the Pilots.....	2-7
2. How Customers Enroll in the Pilots.....	2-9
a. HFP Pilots.....	2-9
b. VGI Pilots.....	2-10
c. How Customers Access HFP Prices	2-11
d. How Customers Experience Billing.....	2-11
e. How the Transactive Platform Works	2-12
D. Timing of the Stop Gap HFP Extension Proposal.....	2-13
1. Post-Pilot RTP Rates Should Be Offered Through PG&E's Modernized Billing Systems	2-13
2. Regulatory and Implementation Timelines Require Extending the Existing HFP Pilot Through 2028 and HFP 2.0 Through 2031	2-14
E. HFP Learnings to Date and Proposed Changes for HFP 2.0	2-18
1. Billing Structure	2-18
a. Learning: Credit-Only Billing Structure May Inhibit Load Response to HFP	2-18
b. Proposed Change to Billing Structure.....	2-19
2. Subscriptions	2-20
a. Learning: Subscriptions Complicate Load Response to Price	2-20

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 2
OVERVIEW OF
PG&E'S STOP GAP HFP PILOT EXTENSION PROPOSAL

TABLE OF CONTENTS
(CONTINUED)

1) Challenges With Subscriptions in the VCE AgFIT Pilot.....	2-22
2) Additional Observations on Subscriptions From PG&E's RTP Pilots	2-23
b. Proposed Change: Remove Subscriptions and Add Revenue Neutral Adder	2-25
3. Distribution Pricing	2-25
a. Learning: PG&E's RTP Distribution Pricing Approach May Need Further Evolution	2-25
b. Proposed Changes: Establish a Procedural Framework for Further Refinement.....	2-26
4. ASP Engagement	2-26
a. Learning: Securing ASP Engagement Is Important	2-26
b. Proposed Change: Develop Contractual Relationship with Selected ASPs.....	2-27
5. Dual Participation.....	2-28
a. Learning: Dual Participation Rules Need to Be Reassessed	2-28
b. Proposed Change: Develop More Consistent Approach Across Load Management Programs	2-28
6. Integration of Customers Who Are Eligible for Phase 2 of the VGI Pilots into the HFP Pilot	2-29
a. Learnings: EV Charging Customers Currently Participating in VGI Pilots Should Continue to Have Access to HFP	2-29
b. Proposed Changes: Integrate EV Charging Rates and Customer Experience into HFP 2.0.....	2-29
7. Rate Eligibility	2-32
a. Learning: Rates With Technology Requirements Constrain Participation	2-32

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 2
OVERVIEW OF
PG&E'S STOP GAP HFP PILOT EXTENSION PROPOSAL

TABLE OF CONTENTS
(CONTINUED)

b. Proposed Change: Add E-TOU-D to Residential Rates Eligible for HFP	2-32
8. Customer Protections.....	2-33
9. CCA Engagement.....	2-35
F. Costs for the Stop Gap HFP Extension	2-36
G. Conclusion and Summary of PG&E's RTP Proposals	2-40

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 2
OVERVIEW OF
PG&E’S STOP GAP HFP PILOT EXTENSION PROPOSAL

A. Introduction

In this chapter, Pacific Gas and Electric Company (PG&E) provides an overview of its “Stop Gap HFP Extension Proposal” to extend, starting in 2028 and continuing through 2031, PG&E’s Hourly Flex Pricing (HFP) pilots, which offer day-ahead hourly prices to customers across most of PG&E’s customer classes.¹ The HFP pilots, which are currently scheduled to end on December 31, 2027, were developed as part of the California Public Utilities Commission’s (CPUC or Commission) Demand Flexibility Order Instituting Rulemaking (R.) 22-07-005 as authorized by Decision (D.) 24-01-032.² The Stop Gap HFP Extension would also incorporate participants in Phase 2 of PG&E’s Vehicle-to-Grid (VGI) pilots that were approved through the Development of Rates and Infrastructure for Vehicle Electrification Rulemaking (R.18-12-006, in D.20-12-029). More detailed discussion of the regulatory background for these pilots can be found in Chapter 1 of this Testimony.

PG&E’s Real-Time Pricing (RTP) pilots have been offered since Q4 2024, and program enrollment is robust, with over 2,300 customer sites representing nearly 340 megawatts (MW) of load enrolled as of April 30, 2026. PG&E seeks to extend the RTP pilots to ensure continuity of PG&E’s HFP pilot offering, and to meet the CPUC’s directive in D.25-08-049³ which references the California Energy Commission’s (CEC) Load Management Standards (LMS) guidance on timing, by ensuring that RTP rates are available to customers by January 1, 2027.⁴ Additional background on the CPUC and CEC directives and guidance is provided in Chapter 1 of this Testimony.

¹ Except streetlighting. Business Electric Vehicle (BEV) customers are offered HFP through Phase 2 of PG&E’s Vehicle-to-Grid Integration (VGI) pilots.

² D.24-01-032, p. 2.

³ D.25-08-049, p. 146, Ordering Paragraph 3.

⁴ 20 California Code of Regulations (CCR), § 1623(d)(2).

While PG&E's RTP pilots have seen considerable enrollment and active engagement by customers and Automated Service Providers (ASP), the current pilot structure is presenting challenges for customers and ASPs to respond to hourly flex prices. Based on learnings from operating the pilots so far and feedback from stakeholders, PG&E is proposing changes to the current HFP pilot structure to offer a revised version of the pilot. We are calling the version of the HFP pilot with these proposed rate and programmatic changes "HFP 2.0." These changes are described in Section E of this chapter and include:

(1) moving to a "credit and charge" billing structure to deliver a stronger incentive for customers to manage load to hourly price; (2) discontinuing subscriptions to provide a clearer price signal; (3) addressing challenges with ASPs' customer recruitment and performance by developing deeper partnerships with selected ASPs; and (4) reducing barriers to enrollment presented by technology-specific rate eligibility restrictions and dual participation in Demand Response (DR) programs.

PG&E expects these changes will not only improve participants' experience on the pilot but will also create a pilot structure that can better develop learnings to help inform future RTP rate offerings. PG&E has also identified opportunities to reduce pilot costs to support PG&E's and California's affordable electricity goals.⁵

In Section B of this chapter, we start with an update on the current HFP pilots and Phase 2 of PG&E's VGI⁶ pilots, collectively, PG&E's RTP pilots. We then outline the customer experience on the current pilots in Section C. In

⁵ California Governor Gavin Newsom, Executive Order N-5-24 (Oct. 30, 2024), available at: <https://www.gov.ca.gov/wp-content/uploads/2024/10/energy-EO-10-30-24.pdf> (accessed May 27, 2026).

⁶ VGI encompasses both unidirectional managed charging (V1G) and Vehicle-to-Everything (V2X) applications. V1G refers to unidirectional managed charging, where EV charging from the grid is shifted in time, location or charging level (i.e., power draw). V2X is a term that encompasses bidirectional applications in which power can flow back from the vehicle to a home business, specific stand-alone load, or the grid. Vehicle-to-Home (V2H) refers to energy discharged from a vehicle to a home that does not flow beyond a customer's primary electricity meter. Vehicle-to-Building (V2B) refers to energy discharged to a building (typically commercial) that does not flow beyond a customer's primary meter. Vehicle-to-Load (V2L) refers to energy discharged from a vehicle that provides power to a standalone load (e.g., appliances). Vehicle-to-Grid (V2G) refers to energy discharged from a vehicle that may flow beyond the customer's primary electricity meter onto the electric grid.

Section D, we delineate timing considerations for the Stop Gap HFP proposal. Next, in Section E, we describe key lessons learned so far from RTP pilot offerings in California. Also in Section E, we outline changes PG&E proposes to the HFP pilots in response to those learnings and other considerations. Certain elements of these proposed changes are detailed further in subsequent chapters. In Section F, PG&E provides a summary of the total costs for the Stop Gap HFP Extension for the 2028 through 2031 period, including both the extension of the RTP Pilots in their current structure through 2028 and the extension of a revised pilot HFP 2.0 through 2031. These costs are further detailed in subsequent chapters and workpapers. Finally, in Section G of this chapter, PG&E provides a list of proposal elements for which PG&E is seeking Commission approval in Table 2-9.

B. Current Status of the HFP Pilots, Phase 2 of the VGI Pilots

1. Enrollment Status

PG&E's current HFP Pilot 1 for agricultural customers and current HFP Pilot 2 for residential, commercial, and industrial (C&I) customers⁷ were launched in November 2024 and Phase 2 of the PG&E's VGI Pilots was launched in October 2024.⁸ Enrollment on all of these RTP pilots has been robust. As of April 30, 2026, PG&E has over 2,300 sites (service agreements) enrolled in the HFP Pilots and Phase 2 of the VGI Pilots, representing nearly 340 MWs of demand. Table 2-1 shows the enrolled sites and MW of load (maximum demand) broken out by customer class.

⁷ This was the designation for the current commercial, industrial, and residential HFP pilot, not to be confused with what we are terming "HFP 2.0" which will be the redesigned pilot PG&E is proposing and describing in this testimony.

⁸ Phase 1 of the VGI Pilots was launched in April of 2024 and was focused on testing V2H and V2B backup power capabilities. Phase 2 expanded the scope to V2G use cases, including export to the grid, bill management, and real-time energy services. In Phase 2 of the residential VGI Pilot (VGI Pilot 1) and Phase 2 of the commercial VGI Pilot (VGI Pilot 2), V2G participants are required to enroll in an RTP rate with day-ahead hourly pricing, subject to CCA participation.

**TABLE 2-1
ENROLLMENT ON PG&E'S RTP PILOTS**

Line No.	PG&E RTP Pilot	Sector	Enrolled Sites ^(a)	Unique Customers ^(b)	MW ^(c)
1	HFP Pilot 1	Agricultural	1,313	280	101
2	HFP Pilot 2	Residential	416	415	4
3		Small & Medium Commercial	220	58	17
4		Large C&I	245	48	39
5	Phase 2 of VGI	Residential	—	—	—
6	Pilot	BEV	158	3	177
7	Total	All	2,352	804	338

Notes: As of April 30, 2026.

- (a) Service Agreements. A service agreement is a contract that serves as a customer-specific billing relationship used to track charges and obligations for a particular utility service (e.g., electric or gas) within an account.
- (b) Unique Customers reflects distinct customers as identified through PG&E's Person ID data field.
- (c) Maximum recorded kilowatt (kW) usage during the preceding 12 months before pilot enrollment.

2. Community Choice Aggregator and ASP Engagement

Engagement by the 18 ASPs⁹ and 9 Community Choice Aggregators (CCA), who are participating in PG&E's RTP pilots, has been important for recruiting customers and enabling load response. CCAs, which serve approximately half of the load in PG&E's service area, are key partners in ensuring customers served by CCAs are able to access the HFP pilot rate. Table 2-2 shows the number of ASPs and CCAs that are participating in the pilots as of April 30, 2026.

⁹ In this context, PG&E considers ASPs to be entities that manage customer end-use devices to respond to RTP prices on the customer's behalf.

TABLE 2-2
ASP AND CCA PARTICIPATION IN PG&E'S RTP PILOTS

Line No.	Pilot	Participating ASPs ^(a)	Participating CCAs
1	HFP Pilot 1	1	6
2	HFP Pilot 2	16	8
3	Phase 2 of the VGI Pilots	4	5
4	Total (some ASPs and CCAs cover multiple pilots)	18	9

(a) Yield Energy (formerly Polaris) that was the VCE pilot's ASP serves as the HFP Pilot 1's one ASP. For HFP Pilot 2, participating ASPs included in this table were defined as those who signed the Pilot 2 participation agreement. For Phase 2 of the VGI pilots, ASPs operate under a different framework than in the HFP Pilot ASP: participating ASPs are required to execute the VGI Pilot agreement, provide data, and do not receive compensation consistent with the ASP incentive structure under the HFP pilots. This count reflects entities performing ASP-like functions—specifically, managing or optimizing customer end-use devices in response to RTP signals on the customer's behalf, or facilitating the delivery of RTP price signals to customers—for V2G Pilot customers on HFP.

3. Price Signals on the Current HFP and VGI Pilots

The hourly price signal customers receive through the HFP and Phase 2 of the VGI pilots consists of generation and distribution price components. The generation price signal consists of Marginal Energy Costs (MEC) that reflect wholesale generation costs and Marginal Generation Capacity Costs (MGCC) that capture costs related to reliability needs. The distribution price component is a function of a sigmoidal formula informed by marginal distribution costs and the day-ahead forecasted load for a representative circuit with similar load characteristics. Table 2-3 below provides an overview of key elements of the current HFP rate design.

**TABLE 2-3
SUMMARY OF EXISTING PILOT (HFP 1.0) RATE OFFERING ELEMENTS**

Line No.	RTP Feature	Existing Pilot Rate Design
1	Marginal Energy Cost (MEC)	California Independent System Operator (CAISO) day-ahead hourly price at the PG&E Default Load Aggregation Point, plus a constant line loss factor.
2	Marginal Generation Capacity Cost (MGCC)	A sigmoidal price curve based on the forecasted adjusted net CAISO load. Designed to collect the average MGCC value over the entire year.
3	Marginal Distribution Capacity Cost (MDCC)	A sigmoidal price curve based on the forecasted load of a representative circuit. Each of PG&E's circuits is mapped to a cluster of circuits that have similar load profiles. A single circuit is chosen that best represents the load shape of all circuits within a given cluster. Designed to collect the average Primary MDCC value over the entire year. Other MDCC components are not time-varying and are not part of the dynamic rate.
4	Non-Marginal Costs	Collected through subscription.
5	Export Compensation	Equal to the dynamic MEC, MGCC, and MDCC values. Because the dynamic price is marginal only, the exports are valued at the same price as consumption. Exports covered by subscription are compensated at the Otherwise Applicable Tariff (OAT) rate.
6	Subscription	Customers are given a predefined load profile, either based on their historical usage or a class average, which is charged at the customer's OAT. Only deviations from the subscription load profile (above or below) are charged (or credited) at the dynamic rate. Each month, the load profile may be scaled after the fact so that the total usage in the subscription profile matches the customer's actual usage.
7	Billing Structure	Customers are shadow billed on the HFP rate. After one year (or at True-Up for Net Energy Metering [NEM]/Net Billing Tariff [NBT] customers, or at de-enrollment), the customer is given a credit if their costs on the HFP rate are lower than on their OAT rate (on which customers continue to be billed in PG&E's primary billing system). No charge is imposed on customers whose bills are higher on the HFP rate compared to their OAT rate. Customers thus have a "credit only" billing structure under which they can be rewarded if their costs are lower on the HFP rate, but do not face risk if their costs are higher on the HFP rate.
8	Forward Transactions	Agricultural customers have the opportunity to lock in prices for a specific quantity of usage at specific hours up to seven days in advance.

1 C. Customer Experience on the HFP and VGI Pilots

2 This section provides an overview of participants' customer experience on
3 the HFP and VGI Pilots. The pilots are designed so that customers:

- 4 • Receive clear information before enrolling;
- 5 • Follow a transparent eligibility-based enrollment process;
- 6 • Have multiple ways to access hourly prices;
- 7 • Can optionally interact with a transactive platform in Pilot 1 (agricultural
8 customers);
- 9 • Receive consistent, understandable performance reports that show
10 customers their HFP billing costs; and
- 11 • Are billed through a "credit only" billing structure such that customers can
12 get credits if they perform better on the HFP rate than they would have on
13 their OAT, but do not get charged if their HFP bill is higher than their OAT
14 bill.

15 The remainder of this section details key elements of the customer
16 experience on the HFP and VGI Pilots to describe how the pilots are currently
17 operating. This is offered so that the proposed changes outlined in the
18 remainder of this chapter and in subsequent chapters can be better understood
19 relative to the current state.

20 1. How Customers Receive Information About the Pilots

21 Customers learn about the HFP and Phase 2 of the VGI Pilots through a
22 combination of utility-hosted digital content, direct outreach, and partner-led
23 engagement. PG&E maintains a public-facing HFP informational website¹⁰
24 that explains how HFP works, eligibility criteria, and customer benefits,
25 including the risk-free nature of the credit-only billing structure. Outreach is
26 conducted through inclusion of HFP in selected PG&E marketing materials,
27 CCA communications, ASP outreach, and PG&E's Business Energy
28 Solutions (BES) representatives who manage customer relationships with
29 larger non-residential customers.

¹⁰ PG&E HFP, available at: <https://www.pge.com/en/account/rate-plans/hourly-flex-pricing.html?vnt=hfp> (accessed May 27, 2026).

1 For Phase 2 of the VGI Pilot, PG&E maintains a VGI webpage¹¹ which
 2 provides an overview of the utility's efforts to explore how electric vehicles
 3 (EV) can support grid reliability, resiliency, and customer value through
 4 bi-directional capabilities. The site primarily describes PG&E's
 5 CPUC-authorized VGI pilots—also referred to as the V2X pilots for
 6 residential, commercial, and microgrid customers—including program
 7 objectives, eligibility requirements, incentives, enrollment targets, and
 8 customer participation steps. It also provides high-level explanations of
 9 bi-directional charging technology and how V2G exports can be
 10 compensated through HFP, along with links to official program rules and
 11 enrollment resources. The site serves as a customer-facing entry point to
 12 PG&E's VGI pilots.

13 PG&E's customer outreach for the VGI pilots is primarily
 14 customer-initiated and partner-enabled, centered on PG&E's VGI webpage
 15 and enrollment resources. PG&E provides a dedicated online presence that
 16 explains the pilots, eligibility requirements, incentives, and enrollment steps,
 17 supported by downloadable checklists, eligible vehicle and charger lists,
 18 frequently asked questions, and links to official program rules. Customers
 19 are directed to enroll through these materials, positioning the website as the
 20 primary entry point for awareness and participation.

21 In parallel, PG&E leverages Original Equipment Manufacturer (OEM)
 22 and technology partner engagement as a key outreach channel for Phase 2
 23 of the VGI pilots. Automakers (e.g., Ford) and charging equipment
 24 providers (e.g., GM Energy) promote the VGI pilots directly to their EV
 25 customers, highlighting the availability of PG&E incentives and bi-directional
 26 charging use cases, such as backup power and grid services. This
 27 partner-led outreach is intended to reach customers who own or are
 28 considering purchasing an eligible vehicle or charger, rather than through
 29 broad utility marketing campaigns. For residential customers, a key
 30 acquisition strategy is for OEMs to target customers in the purchase pipeline

¹¹ PG&E Vehicle-to-Everything (V2X) pilot program, available at:
<https://www.pge.com/en/clean-energy/electric-vehicles/getting-started-with-electric-vehicles/vehicle-to-everything-v2x-pilot-programs.html?vnt=vgi> (accessed May 27, 2026).

and direct them to the pilot as they become eligible. For non-residential customers, PG&E primarily relies on direct engagement with OEMs and with customers enrolled in our EV Fleets program¹² to acquire customers for the VGI commercial pilot. Outreach to BEV customers is done in collaboration with BES representatives for eligible customers.

Across all pilots, customers are informed that participation does not change their existing billed rate during the pilot period and that performance is evaluated through a supplemental HFP “Performance Report” rather than a replacement utility bill. This billing experience is further detailed below in Section C.2.d.

2. How Customers Enroll in the Pilots

a. HFP Pilots

Enrollment in the HFP Pilots follows a structured, eligibility-driven process. Customers submit an online enrollment application via PG&E’s HFP enrollment form hosted on PG&E’s website. PG&E conducts eligibility checks, including:

- Verification that a customer is on an eligible rate schedule;
- Confirmation of SmartMeter™ installation;
- Checks for enrollment in conflicting DR programs; and, where applicable,
- Coordination with a customer’s CCA for CCA approval of enrollment and dual enrollment of CCA DR programs, if applicable.

Customers receive email notifications confirming receipt of the application and subsequent approval or ineligibility. The enrollment notification provides customers with a customer’s effective enrollment start date and representative circuit ID. The circuit ID is used for determining the distribution price component of the HFP rate.

Once enrolled, program enrollment flags are set on the customer’s PG&E service account to enable price publication, subscription calculation, shadow billing, and to prevent enrollment in DR programs that are not allowed for dual participation.

¹² PG&E EV Fleet Program, available at: <https://www.pge.com/en/clean-energy/electric-vehicles/ev-fleet-program.html> (accessed May 27, 2026).

b. VGI Pilots

Enrollment in PG&E's VGI pilots is a structured, customer-initiated process that requires customers to confirm eligibility, select approved vehicles and bi-directional charging equipment, and complete required electrical assessments and installations prior to participation.

Customers begin by reviewing pilot information and program rules on PG&E's VGI webpage, then follow a standardized VGI checklist that includes site evaluation by a qualified electrician, installation of eligible equipment, and submission of required documentation. PG&E reviews applications, verifies compliance with program requirements, and completes any necessary interconnection and engineering reviews before granting the customer permission to operate.

VGI Pilots participation is a high touch process from PG&E's perspective and requires significant customer support. All EV customers who plan to export to the grid are required to meet the requirements of PG&E's Electric Rule 21¹³ and have an interconnection agreement in place in order to enroll in HFP.¹⁴ Once a bi-directional EV charging customer enrolls in the VGI Pilot, they are instructed to complete a Rule 21 interconnection application via PG&E's Your Projects portal.¹⁵ In Phase 2 of PG&E's VGI pilots, enrollment in HFP occurs after an EV customer has completed VGI pilot enrollment, installed eligible bi-directional equipment, and received permission to operate under Rule 21. These customers thus do not have to enroll in the HFP separately. EV customers are required to dual enroll in Emergency Load Reduction Program (ELRP) subgroup A5 in order to participate in VGI pilots. PG&E staff members assist with this process.

¹³ PG&E Electric Rule No. 21, available at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_RULES_21.pdf (accessed May 27, 2026).

¹⁴ V1G BEV customers—unidirectional EV customers without ability to export—are also eligible for HFP under Phase 2 of the VGI pilots but are not required to interconnect under Rule 21.

¹⁵ PG&E Your Projects portal, available at: <https://yourprojects-pge.com> (accessed May 27, 2026).

c. How Customers Access HFP Prices

Customers and ASPs can access HFP prices through multiple channels designed to support transparency and operational use:

- Day-ahead hourly prices and seven-day forecasts are published daily on PG&E's website;
- Day-ahead prices are also published on the CEC's Market-Informed Demand Automation Server;
- For HFP Pilot 1 agricultural customers, prices are also displayed through Yield Energy's graphical user interface, which allows customers to view prices alongside their load schedules; and
- Customers, ASPs, and CCAs may also access prices programmatically via an Application Programming Interface (API) to support automated load control or advisory services.¹⁶

d. How Customers Experience Billing

Customers participating in the HFP Pilots receive supplemental reporting on their HFP charges rather than a replacement utility bill. Customers continue to receive and pay their regular PG&E electric bill under their existing OAT rate plan.

Separately, each enrolled customer receives a monthly HFP Performance Report which shows the customer's energy costs under the HFP rate. Performance Reports are generated after each billing cycle. Customers on HFP Pilot 1 receive the Performance Reports online and customers on HFP Pilot 2 have reports delivered to them via United States (U.S.) mail¹⁷. The monthly reports show:

- Current OAT rate plan charges;
- HFP charges;
- Monthly performance on HFP vs. their OAT; and
- Cumulative annual performance toward an annual True-Up.

If a customer's cumulative annual HFP bill (calculated after 12 billing cycles, netting the total charges and credits), is less than their

¹⁶ The price API is also publicly available (i.e., not limited to enrolled pilot participants, ASPs, and CCAs) and is provided in OpenADR 3.0 format.

¹⁷ Customers in HFP Pilot 2 will soon be able to access their Performance Reports online.

1 cumulative annual OAT bill, they receive a credit on their PG&E Energy
 2 Statement (primary bill). If their cumulative 12-month HFP bill is greater
 3 than their OAT bill, customers are not charged additional amounts,
 4 representing the “reward only” nature of participation on the current
 5 pilots. This reconciliation process is called a “True-Up” in this testimony.

6 Participants in Phase 2 of the VGI Pilots have a billing experience,
 7 performance reporting, and billing cadence/format that is similar to
 8 participants in HFP Pilots 1 and 2.

9 **e. How the Transactive Platform Works**

10 HFP Pilot 1 participants (customers on agricultural rates) can go to a
 11 transactive platform that allows them to view and secure prices up to
 12 seven days in advance. The HFP transactive platform is the settlement
 13 engine that converts published day- or week-ahead hourly prices,
 14 customers’ planned usage schedules, and metered usage to arrive at
 15 HFP charges. Only HFP Pilot 1 has this feature.

16 To leverage the transactive pricing features, customers are provided
 17 access to a web-based transactive platform operated by Yield Energy
 18 (previously known as Polaris Energy Services). At a high level, on this
 19 platform, customers can:

- 20 • View hourly prices up to seven days in advance; and
- 21 • Submit schedules for operation for up to seven days in advance and
- 22 secure the projected HFP pricing for that usage associated with the
- 23 scheduled operation.

24 Customers view forward hourly price forecasts and modify their
 25 exposure by scheduling future usage through the platform, which
 26 records forward transactions for future hourly intervals at the forward
 27 HFP price. After the end of a given monthly billing period, the platform
 28 performs ex-post (post-billing) subscription reconciliation using
 29 revenue-grade interval data to align subscription and scheduled usage
 30 with actual consumption. This produces final total costs for each service
 31 agreement that is shown on the HFP Performance Report for
 32 comparison against customers’ OAT bills.

D. Timing of the Stop Gap HFP Extension Proposal

In this section, PG&E describes why the Stop Gap HFP Extension needs to cover the period 2028-2031. PG&E's current HFP Pilots are scheduled to end on December 31, 2027.¹⁸ In consideration of the CPUC's D.25-08-049 and the CEC's LMS guidance to make RTP rates available to customers by January 1, 2027 and thereafter, PG&E is requesting this extension until post-pilot RTP rates¹⁹ can be built in PG&E's modernized billing system, the proposed Customer-to-Meter (C2M) system. There is, however, uncertainty in when C2M will be operationalized, especially given that PG&E's proposal and funding request to modernize PG&E's billing system is still pending before the CPUC as part of PG&E's Billing Modernization Initiative (BMI) Application (A.) 24-10-014. The Stop Gap HFP Extension provides an important bridge for PG&E to continue to offer an hourly dynamic rate to customers until PG&E can build RTP rates into its modernized billing system.²⁰

1. Post-Pilot RTP Rates Should Be Offered Through PG&E's Modernized Billing Systems

PG&E plans to build post-pilot RTP rates in PG&E's modernized billing system, once it is operationalized. PG&E must modernize its outdated billing systems to continue to deliver reliable customer service, including continuing to provide billing services to customers. PG&E's billing systems are over two decades old and in need of systemwide upgrades and replacement. In our BMI Application, which is pending at the CPUC, PG&E

¹⁸ While the current HFP pilots are scheduled to end on December 31, 2027, PG&E will maintain access for BEV customers to the HFP rate at all times during this transition, including after the closure of VGI Pilot enrollment expected on June 30, 2027. Although BEV customers are not currently eligible for enrollment in HFP 1.0, BEV customers can participate in dynamic pricing via Phase 2 of the VGI Pilots until HFP 2.0 is available. Under PG&E's proposal, BEV1 and BEV2 customers would become eligible for HFP 2.0 beginning with the implementation of HFP 2.0, currently estimated for January 2029 or earlier if feasible. Section E.6 of this chapter describes PG&E's plan to make HFP available to EV charging customers.

¹⁹ PG&E generally considers pilot rates to be time-limited rate offerings for the purpose of testing rate design features. Pilot rates may be more frequently adjusted to make operational and customer experience improvements which can generate evidence to inform future rate offerings. By a post-pilot RTP rate offering, PG&E is referring to a future RTP rate that would be offered for a more enduring time period.

²⁰ Due to the uncertainties in the timing for PG&E's BMI, PG&E may need to request an additional extension of HFP beyond 2031.

1 seeks the funding necessary for customer billing services and data
 2 management for our over six million customers on the full range of rates
 3 offered by PG&E.²¹

4 PG&E is developing a plan for building post-pilot RTP rates into PG&E's
 5 proposed C2M, but that plan is contingent on a pending decision in the BMI
 6 proceeding and other considerations. PG&E will propose a plan and timing
 7 for post-pilot RTP rate implementation in our future application for post-pilot
 8 RTP rates. Per the *Administrative Law Judge's Ruling Setting Schedule for*
 9 *the Dynamic Rate Options Track* issued January 7, 2026 in this proceeding
 10 (Administrative Law Judge [ALJ] Dynamic Rate Schedule Ruling), PG&E's
 11 future post-pilot RTP rate application will be submitted subsequently to, and
 12 separately from, this current 2023 General Rate Case (GRC) Phase II
 13 proceeding (A.24-09-014).²²

14 **2. Regulatory and Implementation Timelines Require Extending the** 15 **Existing HFP Pilot Through 2028 and HFP 2.0 Through 2031**

16 PG&E is proposing a number of improvements in our Stop Gap
 17 Proposal, as outlined in the next section, and looks forward to implementing
 18 an "HFP 2.0" once stakeholder input is considered and the CPUC provides a
 19 final decision on the path forward. The projected timing for the Stop Gap
 20 HFP Extension Proposal is illustrated in Figure 2-1, which shows estimated
 21 regulatory, evaluation, and implementation milestones. Some of the key
 22 milestones that will shape the timing are the following:

- 23 • Final Decision on this Stop Gap HFP Extensions Proposal: Given the
 24 regulatory timeline put forth in the ALJ ruling issued January 7, 2026, a
 25 final decision on this Stop Gap Proposal may not be issued until
 26 mid-2027.
- 27 • Time Required for Implementation and Need to Extend Pilots in Current
 28 Form: A final decision in mid-2027 would not provide PG&E adequate

21 The specific timelines and project details of the BMI are presented in A.24-10-014, PG&E's Billing Modernization Application Initial Testimony (Oct. 23, 2024), p. 5-34, lines 3-10, which was updated in PG&E Updates to Billing Modernization Initiative Timeline Supplemental Testimony (Mar. 17, 2026), Attachment A.

22 *Administrative Law Judge's Ruling Setting Schedule for the Dynamic Rate Options Track* (Jan. 7, 2026), p. 3.

time, before December 31, 2027, to make the pilot adjustments proposed in this testimony. These adjustments are estimated to take approximately 18 months from the final decision, though PG&E will continue to seek ways to potentially accelerate this timing. Therefore, PG&E requests that authorization and funding for the HFP pilots, in their current form, be extended through 2028, while revisions for an HFP 2.0 version of the pilot are implemented.

- Transition to HFP 2.0: The adjusted HFP 2.0 pilots would then be implemented by January 1, 2029 (or sooner, if possible, should the regulatory process and PG&E's implementation efforts move more quickly). Due to delays to PG&E's BMI application, post-pilot RTP rates may not be able to be implemented in PG&E's billing system until 2032 at the earliest, which necessitates extending the HFP 2.0 pilot through at least 2031. The pilots may need to be further extended depending on when PG&E can build post-pilot RTP rates in our proposed C2M system.²³ PG&E will provide an updated plan for post-pilot RTP implementation in a future RTP application as discussed above.
- PG&E BMI Timing: As discussed in the previous section of this chapter, Section D.1, PG&E plans to build post-pilot RTP rates in its modernized billing system. PG&E is seeking funding for its modernized billing system as part of its BMI application. A Final Decision in the BMI application will help PG&E design key scope and capabilities of the C2M system required to develop a post-pilot RTP implementation plan in a future RTP rate application.
- Timing for PG&E's Post-Pilot RTP Application: PG&E plans to submit its post-pilot RTP rate application after the completion of the Final HFP 1.0 Evaluation Study expected in March 2028 and the newly-proposed RTP Impact Assessment (estimated to be completed by May 2028) that is further detailed in Chapter 7 (Measurement and Evaluation). There is considerable uncertainty in the timing for PG&E's post-pilot RTP

²³ The updates to the BMI timeline are presented in A.24-10-014, Supplemental Testimony (Mar. 17, 2026).

1 implementation, which is why PG&E is proposing to provide a plan as
2 part of our future RTP application, as discussed above.

3 Table 2-4 below summarizes the evolution of the pilots as proposed in
4 this HFP Extension Stop Gap Proposal testimony. PG&E is calling the
5 pricing and billing structure for the current RTP pilots (HFP Pilot 1, HFP
6 Pilot 2, and Phase 2 of the VGI Pilots) “HFP 1.0” and the pricing and billing
7 structure with the changes proposed in this testimony “HFP 2.0”.

FIGURE 2-1
TIMING FOR HFP PILOT EXTENSION AND POST-PILOT RTP RATE OFFERINGS

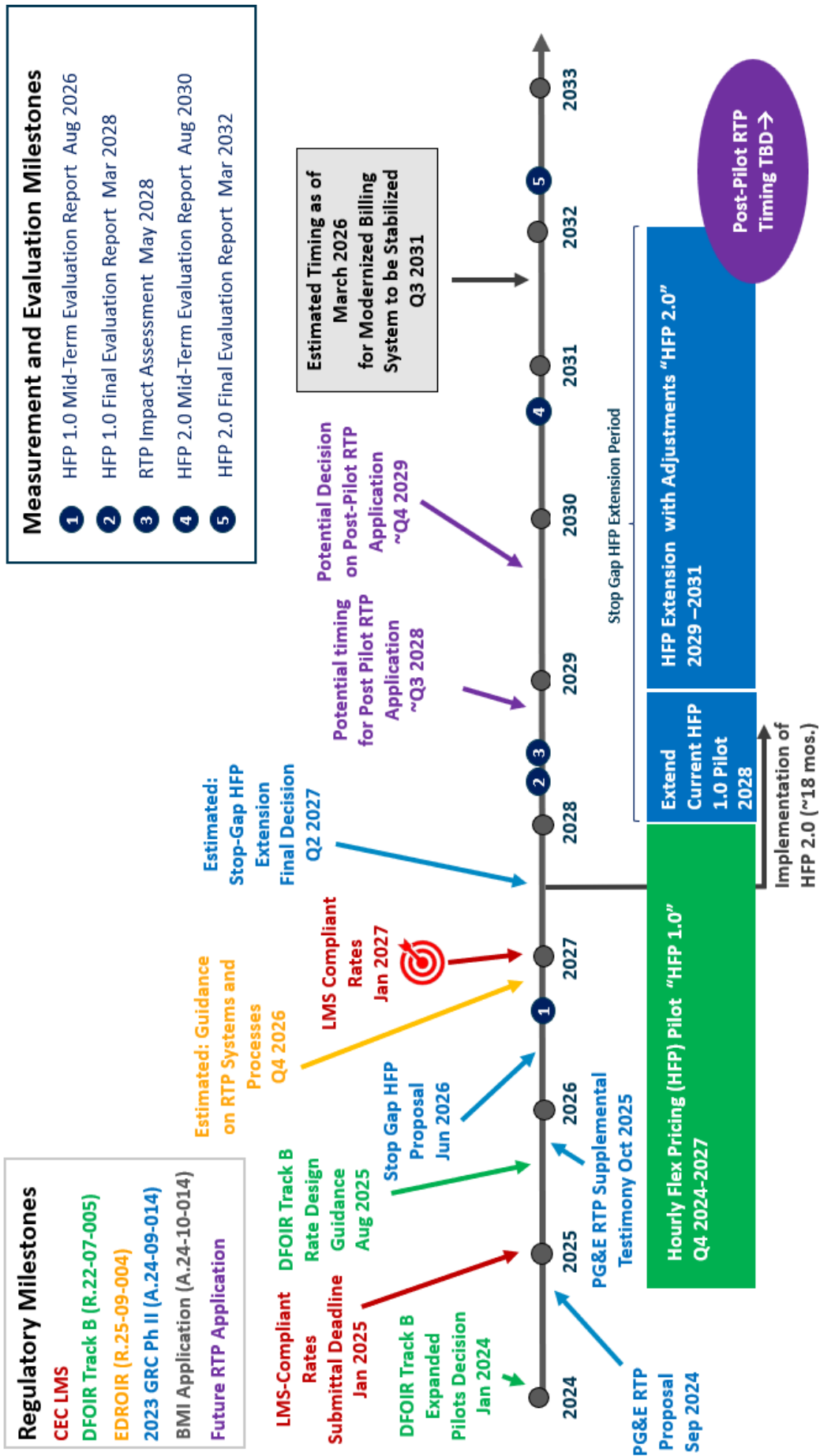


TABLE 2-4
TIMING FOR WHAT VERSION OF HFP WOULD BE AVAILABLE TO CUSTOMERS
DURING THE STOP GAP HFP EXTENSION PROPOSAL PERIOD

Line No.		Approved Period for Current RTP Pilots	Stop Gap Period 2028-2031	
1	Pricing and Billing Structure	HFP 1.0	HFP 1.0	HFP 2.0
2	Years	Q4 2024-2027	2028	2029-2031
3	Pilot Evolution	HFP Pilot 1 (Agricultural)	HFP Pilot 1 (Agricultural)	HFP 2.0 will include all customer sectors (including BEV)
4		HFP Pilot 2 (Res, Com, Ind)	HFP Pilot 2 (Res, Com, Ind)	
5		Phase 2 of VGI Pilot	See section E.6 of this Chapter	

E. HFP Learnings to Date and Proposed Changes for HFP 2.0

Since the HFP pilots and Phase 2 of the VGI pilots were launched in Q4 2024, PG&E and stakeholders have learned much about RTP rates and the customer experience with those rates. Additionally, evaluations of the prior Valley Clean Energy (VCE) Agricultural Flexible Irrigation Technology (AgFIT) and Southern California Edison (SCE) Dynamic Pricing Pilots have also provided important insights on RTP offerings. In this section, PG&E describes these learnings and outlines proposed changes to its HFP pilot that would be implemented starting in 2029 (or earlier if feasible), with certain changes detailed in subsequent chapters. These changes for HFP 2.0 seek to improve customer experience and load response and facilitate further learnings to shape subsequent RTP rate offerings. An additional important consideration in proposing changes was to identify potential areas for cost savings to help support overall customer rate affordability. The following are key learnings and changes that PG&E proposes for HFP 2.0, organized by pilot element:

1. Billing Structure

a. Learning: Credit-Only Billing Structure May Inhibit Load Response to HFP

PG&E's RTP Pilots use a credit-only billing structure, as did the previous VCE AgFit Pilot and SCE's Dynamic Pricing Pilot. Under this structure, customers receive credits if their RTP bills (billed through a

shadow billing system) are lower than their OAT bills (billed in the utility's primary billing system). However, customers are not exposed to charges if their RTP bills are higher than their OAT bills, as described in Section C.2.d in this chapter.

A credit-only billing structure makes it difficult to attribute load response to the HFP rate because customers have an incentive to pay attention to two sets of price signals simultaneously (HFP and the OAT prices), and likely have a stronger incentive to respond to the OAT than the HFP to limit the risk of a high bill.²⁴ This behavior would be consistent with economic assessments of "loss aversion" which indicate that, across various behaviors and decision making processes, most people put more weight on the potential for loss (in this case, a high OAT bill) than on the potential for a reward (the HFP credit), which may lead customers to pay greater attention to responding to the OAT price.²⁵ Furthermore, this structure may have attracted customers who are testing whether or not they can be structural winners on RTP rate design (i.e., get credits without changing load patterns).²⁶

b. Proposed Change to Billing Structure

PG&E proposes to change from a "credit only" structure to a "credit and charge" structure to expose customers to both the potential reward of saving on HFP as well as the risk of a higher HFP bill. PG&E believes this is critical for ensuring that customers have a stronger incentive to respond to the HFP rate. In other words, customers would

²⁴ See Hansen, et al., Christensen and Associates, Final Evaluation of Southern California Edison's Dynamic Rate Pilot (Feb. 28, 2025), p. 7, available at: <https://www.dret-ca.com/wp-content/uploads/2025/03/PUBLIC-SCE-DRP-Final-Evaluation-Report.pdf> (accessed May 12, 2026); Hansen and Clark, Final Evaluation of Valley Clean Energy's Agricultural Pumping Dynamic Rate Pilot (Apr. 17, 2025), pp. 3, 82, available at: <https://www.dret-ca.com/wp-content/uploads/2025/04/VCE-AgFIT-Pilot-Final-Evaluation-Report.pdf> (accessed May 12, 2026).

²⁵ See, e.g., the recent survey which examined "607 empirical estimates of loss aversion from 150 articles in economics, psychology, neuroscience, and several other disciplines, Brown, Alexander L., Taisuke Imai, Ferdinand M. Vieider and Colin F. Camerer. 2024. "Meta-analysis of Empirical Estimates of Loss Aversion." *Journal of Economic Literature*, 62 (2):485–516, available at: <https://www.aeaweb.org/articles?id=10.1257/jel.20221698> (accessed May 27, 2026).

²⁶ Based on PG&E's experience with its RTP Pilots.

be subject to higher charges under HFP, in addition to receiving credits when their HFP bills are lower than their OAT bills.

Under a credit and charge billing structure, with shadow billing on the HFP rate and continued billing on the OAT rate in PG&E's primary billing system, whether a customer receives a credit or charge on their bill would be determined by the following:

At True-Up (12 months, or at a more frequent cadence if deemed feasible) if:

- Cumulative OAT bills exceed cumulative HFP bills, apply credit on bill;
- Cumulative OAT bills are lower than cumulative HFP bills, add charge to bill.

Implementing this new billing structure would eliminate the current bill protection that results from credit-only shadow billing and eliminate the risk-free nature of the current RTP pilots.²⁷ This change would also mitigate the concern for PG&E, CCAs, and stakeholders that credits to customers without the offsetting charges could create cost shifts to non-participating customers, as customers who do not perform on HFP would be subject to being charged at the HFP rate.

2. Subscriptions

a. Learning: Subscriptions Complicate Load Response to Price

PG&E has received considerable feedback from customers that they find subscriptions challenging to understand and manage to ensure they are achieving bill savings. Some RTP rates offered by other providers in the United States include a subscription,²⁸ and the RTP pilots in PG&E's service area have also included this feature. However, subscriptions have generally been made available only for larger C&I

²⁷ PG&E is proposing an alternative customer protection approach, see Section E.8 of this Chapter and Chapter 3, Section F.

²⁸ Electric Power Research Institute (EPRI), Benchmarking Study of U.S. Regulated Utility Real Time Pricing Programs, Architecture and Design, Final Report, 3002021204 (Technical Update Mar. 2021), p. 3-10, available at: <https://www.epri.com/research/products/000000003002021204> (accessed May, 27, 2026).

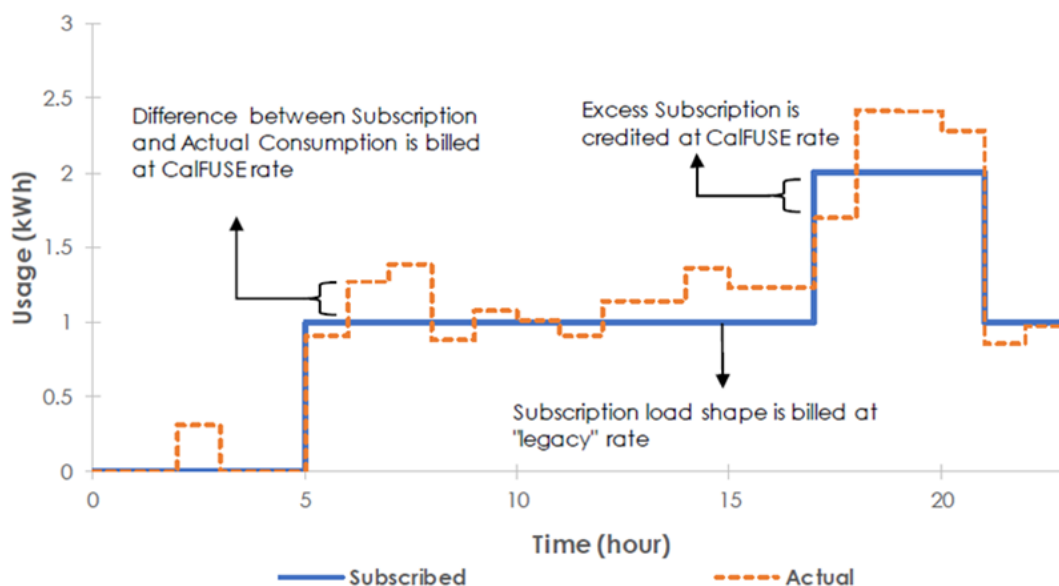
customers. The two U.S. utilities PG&E is aware of that offer residential RTP, Ameren and ComEd, do not include a subscription feature as part of those offerings.²⁹ Subscriptions are designed to reduce customer exposure to the variability in the hourly price by ensuring that a portion of the customer bill is charged and paid at the OAT. This means that only deviations from a customer's subscription load profile will be charged (when load is higher than the subscribed usage) or credited (when load is lower than the subscribed usage) at the dynamic hourly rate, which provides a hedging mechanism against sustained periods of high dynamic prices.

In its CalFUSE White Paper, Energy Division provided the following figure, illustrating how the subscription would work.³⁰ The blue line represents the pre-purchased load shape, while the orange dashed line is the customer's actual usage. Only the area between these two lines is exposed to the dynamic price.

²⁹ A.19-11-019, PG&E-RTP-1, Ch. 5, Appendix A, Benchmarking Study of U.S. Regulated Utility Real Time Pricing Programs, Architecture and Design, Final Report, March 2021, Attachment A.

³⁰ R.22-07-005, CPUC, Energy Division, Advanced Strategies for Demand Flexibility Management and Customer Distributed Energy Resource Compensation (June 22, 2022) (CalFUSE White Paper), p. 67, 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> (accessed May 27, 2026).

FIGURE 2-2
ENERGY DIVISION'S ILLUSTRATION OF THE SUBSCRIPTION IN ITS CALFUSE FRAMEWORK



Another reason subscriptions are sometimes used in RTP is to reduce risk of revenue under collection for the electric service provider, given that the RTP prices generally reflect only marginal costs and the subscription collects a majority of those fixed non-marginal, or embedded, costs.

1) Challenges With Subscriptions in the VCE AgFIT Pilot

The VCE AgFit pilot provided valuable learnings about subscriptions. The initial stage of the VCE AgFIT pilot included a subscription option. Under this structure, customers were only exposed to the RTP price for usage above or below their subscription level. The subscription level was based on the customer's historical usage. Usage below that subscription amount was credited at the RTP price, while incremental usage above the subscription amount was charged at the RTP price. The credits and charges were decremented or added to the amount the customer would owe—calculated based on the subscription level of usage and the customers' OAT—to determine the customer's RTP bill in a given month.

An important learning from the VCE AgFit pilot was that customers with significant year-to-year variation in usage may face challenges when subscriptions are tied to historical usage. The

VCE AgFIT Pilot contained a subscription based on usage for only its first year of operation. After the first year, the subscription based on usage was removed. Instead, a “price averaging” method was put in place, in which the forecasted prices for the coming week were all adjusted up or down, such that the average price over a 2-week period was equal to the average actual retail price.³¹ This change was made primarily because the pumping needs of the VCE customers on the pilot varied significantly year-over-year. The standard subscription method did not work well when subscribed load was frequently above or below the actual load, because customers would be charged retail rates on a load profile that was quite different from their actual usage and then be charged or credited for the difference on a dynamic rate. Customers were thus often underpaying or overpaying for electricity, relative to their cost of service. From the VCE AgFit experience, PG&E learned that customers with significant year-to-year variation in usage faced challenges with subscriptions that are tied to the prior year’s historical usage.

2) Additional Observations on Subscriptions From PG&E’s RTP Pilots

While a formal mid-term evaluation of PG&E’s RTP pilots will not be completed until August 2026 and will provide more insights into how subscriptions have impacted the effectiveness of HFP, PG&E has to date observed challenges with subscriptions in HFP 1.0. Similar to what was found in the VCE AgFit pilot, customers with significant year-to-year variation in usage (e.g., agricultural and some C&I customers) can experience challenges with subscriptions that are based on historical usage. An unscaled subscription level that is too high can subject customers to higher OAT charges for

³¹ The price averaging method provides some insulation from extreme high prices by ensuring that the average price over a 2-week period remains constant. If extremely high prices are present, then the averaging mechanism either brings down the high prices and/or offers very low prices during other hours to mitigate the high price periods. Because all prices are shifted up or down by a constant factor, the within-day variation of the hourly prices is maintained.

1 electricity they do not use (while credits are provided only at
2 marginal cost). A subscription that is too low can result in
3 customers achieving bill savings without changing load patterns.

4 To address the challenge of how to appropriately set a
5 subscription based on historical usage for customers with significant
6 year-over-year variability in usage, PG&E scaled the hourly usage
7 subscriptions based on a customer's actual usage in the month.
8 However, this subscription scaling muddles the price signal
9 customers face when changing usage in a given hour. For example,
10 if a customer wanted to significantly increase usage during low-cost
11 hours (without reducing usage elsewhere), they must first pay for
12 their subscription profile based on historical usage at OAT prices.
13 That profile is then scaled after the monthly billing period has
14 concluded to reflect the higher total usage, which forces them to pay
15 for additional usage at the higher subscription prices (at the OAT
16 prices).

17 Also, a finding based on feedback from pilot participants is that,
18 for some customers, subscriptions can unduly limit customers' ability
19 to generate bill savings through load management by limiting the
20 degree to which a customer is exposed to the HFP price.

21 Another learning is that subscriptions add significant
22 implementation complexity and costs for both PG&E and
23 customers/ASPs. PG&E has heard from customers and ASPs that
24 subscriptions complicate the price arbitrage opportunity, which can
25 make achieving bill savings on HFP more challenging. In terms of
26 implementation costs, the current subscription model requires the
27 vendor who manages billing calculations under the HFP rate, GridX,
28 to maintain a "subscription engine" to calculate customers'
29 subscriptions based on historical data. The subscription feature of
30 the current HFP pilot also requires modeling each customer's costs
31 at the OAT based on the subscription usage and determine HFP
32 charges or credits only for usage above or below the subscription.
33 Managing subscriptions adds cost to the overall implementation of
34 RTP.

Finally, subscriptions present Measurement and Evaluation (M&E) challenges to estimating load response due to the HFP. This is because having a subscription makes it difficult to estimate whether customers are responding to their OAT prices (at which subscription usage is charged) or the hourly flex prices.

b. Proposed Change: Remove Subscriptions and Add Revenue Neutral Adder

Due to the challenges associated with subscriptions, PG&E proposes to remove subscriptions and collect non-marginal costs through a Revenue Neutral Adder (RNA) for our HFP 2.0 proposal. This will allow for a transparent ‘the price you see is the price you pay’ design.

More detailed discussion of PG&E’s proposed removal of subscriptions and shift to using RNA to recover non-marginal costs is covered in Section E of Chapter 3 (Rate Design).

3. Distribution Pricing

a. Learning: PG&E’s RTP Distribution Pricing Approach May Need Further Evolution

In PG&E’s HFP and Phase 2 of the VGI pilots, the distribution component of the HFP rate is being determined at a distribution circuit level.³² PG&E’s over 3,000 distribution circuits are grouped into 59 clusters with similar load profiles and each circuit’s pricing is based on the day-ahead forecasted load on one of those 59 representative circuits. The complexity of the distribution system and sensitivity of circuit-level load profiles to changes in coincident and noncoincident demand patterns makes load forecasting and price modeling challenging.³³ Consequently, while PG&E has made refinements to the distribution component of the HFP pilots to address such challenges,

³² A set of conductors of the electric primary distribution system originating at a substation and delivering power to a defined set of downstream customers and equipment, with load, topology, and operating characteristics that can be analyzed and managed as a unit

³³ PG&E 2023 GRC II Supplemental Testimony, Exhibit (PG&E-5) Real-Time Pricing Proposal (Oct. 29, 2025), pp. 2-15 to 2-18.

1 PG&E also continues to refine its thinking and identify additional
2 improvements as we learn more from the pilot performance. As is
3 further discussed in Chapter 3 of this testimony, there are remaining
4 uncertainties around what rate design considerations may further
5 improve customer experience and performance. Continued experience
6 and learning will likely result in additional opportunities for refinement
7 and evolution of the distribution component design.

8 **b. Proposed Changes: Establish a Procedural Framework for Further**
9 **Refinement**

10 PG&E will continue to analyze and refine other potential ways to
11 present a more effective distribution signal and proposes an Advice
12 Letter process to enable that refinement without the need to create more
13 rate application filings. Additional discussion of PG&E's RTP
14 Distribution price component of the HFP rate is in Section G of
15 Chapter 3 (Rate Design).

16 **4. ASP Engagement**

17 **a. Learning: Securing ASP Engagement Is Important**

18 ASPs can play an important role in the HFP pilots by supporting
19 customer enrollment and load response on the HFP rate. To date,
20 18 ASPs have chosen to participate in PG&E's RTP Pilots. However,
21 only a subset of these ASPs is actively participating (i.e., conducting
22 outreach, enrolling customers, and working to automate customer load
23 response to price signals).

24 There are several potential challenges that ASPs appear to be
25 facing. Some ASPs have pointed to HFP rate complexity and a limited
26 market opportunity (population of customers who are likely to participate
27 on pilots and need ASP assistance) as reasons for not fully engaging.
28 Some ASPs have indicated that the current ASP incentive of
29 \$42/kW-year of enrolled controlled load (for HFP Pilot 2) does not
30 appropriately compensate for their internal pilot start-up costs and
31 ongoing support efforts.

b. Proposed Change: Develop Contractual Relationship with Selected ASPs

PG&E proposes a change to the ASP engagement model, with the goal of having a more focused and engaged group of ASPs that are successfully enrolling customers and proactively managing customer response across a variety of end-uses. PG&E proposes an approach similar to that used in SCE's current Flexible Pricing Pilot, which is to select ASPs through a Request for Proposals (RFP) process based on criteria such as the ASP's:

- Capability to engage, acquire and automate load response for customers;
- Knowledge and experience with dynamic rates; and
- Focus on customer end-uses that have the most potential for load flexibility.

PG&E would then develop a contractual relationship with each selected ASP, under which PG&E would provide the ASP a fixed annual program management fee and a variable payment. The variable payment would be based on the ASP achieving defined milestones for customer enrollment and demonstrated load response. PG&E would target five to six contracted ASPs to support load response across key end-uses and customer sectors, including residential, agricultural, commercial, industrial, and BEV customers.

PG&E estimates that \$3.6 million will be needed to support this revised ASP model over the three-year duration of HFP 2.0 from 2029-2031. When HFP 1.0 sunsets by the end of 2028, we estimate having an unused balance of approximately \$2.6 million from the original pilot budget for ASP incentives and request to make those funds available for 2029-2031. In addition, we request \$1 million in incremental funding to support a total ASP budget of \$3.6 million. For comparison, the original HFP pilot authorized \$3.6 million for Pilot 2 ASPs. Additionally, approximately \$2.5 million was used for HFP Pilot 1 vendor support costs specific to customer education, outreach, acquisition, and support. PG&E proposes to "step-down" ASP compensation with every additional year of ASP participation to provide

1 more support in the beginning of an ASP's engagement and then reduce
2 compensation as the ASP further develops its business model to
3 provide its services to customers.

4 **5. Dual Participation**

5 **a. Learning: Dual Participation Rules Need to Be Reassessed**

6 Customers enrolled in the HFP pilots can also enroll in rates and
7 programs designed to encourage load response. These include Critical
8 Peak Pricing (CPP) rates (such as Peak Day Pricing and SmartRate™),
9 and certain ELRP Subgroups. Customers enrolled in Phase 2 of the
10 VGI Pilots can also enroll in CPP rates and are required to dual
11 participate in ELRP Subgroup A5 (EV/V2G Aggregators). A key
12 concern with current dual participation rules for HFP is that large C&I
13 customers on the Base Interruptible Program (BIP) cannot also
14 participate in HFP. BIP incentives are more established than potential
15 cost savings under HFP, which discourages customers to shift to the
16 HFP pilot. In addition, as V2G customers transition to HFP 2.0, dual
17 participation with ELRP Subgroup A5 should continue, with potential
18 adjustments to the compensation formula. Both of these
19 recommendations are further discussed in Chapter 4, Dual Participation.

20 **b. Proposed Change: Develop More Consistent Approach Across** 21 **Load Management Programs**

22 PG&E asserts that a more consistent and reasonable approach for
23 dual participation across load management programs is needed and has
24 requested that a determination on this be developed through the
25 Enhanced Demand Response Order Instituting Rulemaking (EDROIR)
26 (R.25-09-004), currently before the Commission. If guidance does not
27 come from the EDROIR in time for implementing the HFP 2.0 pilot
28 structure, PG&E requests the opportunity to submit an Advice Letter to
29 enable dual participation changes, such as allowing BIP customers to
30 participate in the HFP pilot and also extend ELRP A5 dual enrollment
31 eligibility for EV customers with potentially revised methodology to
32 prevent dual compensation.

6. Integration of Customers Who Are Eligible for Phase 2 of the VGI Pilots into the HFP Pilot

a. Learnings: EV Charging Customers Currently Participating in VGI Pilots Should Continue to Have Access to HFP

PG&E would like to continue to make HFP available to EV and EV charging customers and also to future customers who may seek to manage and export flexible EV load in response to dynamic hourly prices. This will require broadening eligibility to include BEV charging customers in the HFP 2.0 pilot as Phase 2 of the VGI Pilots sunsets.

b. Proposed Changes: Integrate EV Charging Rates and Customer Experience into HFP 2.0

PG&E's VGI pilots are subject to an authorized budget cap and are permitted to operate until that budget is exhausted. Currently, PG&E expects to close enrollment in the VGI pilots on June 30, 2027.³⁴ Following the enrollment closure, Phase 2 activities will remain active to support enrolled customers and maintain continuity during the transition to HFP 2.0. PG&E will determine the timing and approach for concluding Phase 2 activities and transitioning customers to successor offerings at a later date (Phase 2 sunset).

Currently, BEV customers are eligible to participate under Phase 2 of the VGI Pilots, but are not eligible under the existing HFP pilots, whereas residential V2G customers are already eligible to participate in the current HFP pilots. To avoid gaps in program availability and with consideration of LMS guidance, Phase 2 of the VGI Pilots would remain available for BEV V1G and V2G customers until HFP 2.0 is ready to accept BEV applications. During this interim period, all new BEV customers seeking participation would continue to enroll through Phase 2 of the VGI Pilots, while new residential V2G customers would be directed to enroll in the current HFP or HFP 2.0, depending on HFP pilot availability and timing. Table 2-5, below, summarizes PG&E's proposed approach to integrating EV customers into the HFP pilots.

³⁴ Pilot end dates may vary by sector and pilot phase rather than occurring simultaneously across all VGI pilot activities.

- 1 During the interim period, BEV customers would not be able to collect
 2 VGI Pilot incentives, which are only available during Phase 1 of the VGI
 3 pilots and only for V2G BEV customers.

**TABLE 2-5
 PROPOSED CHANGE TO RATE ELIGIBILITY
 UNDER HFP 2.0 VS. CURRENT STATE FOR VGI CUSTOMERS**

Line No.	Customer Segment	Customer Type	Current HFP Pilots (HFP 1.0)	HFP 2.0	Key Transition/Support Notes
1	Residential V2G	Enrolled Customers in Phase 2 of the VGI Pilot	Eligible	Eligible	Can continue participation through Phase 2 of the VGI pilot until Phase 2 sunset; after which customers must apply to enroll in HFP 1.0 or HFP 2.0 depending on which HFP pilot is active
2		New Customers	Eligible	Eligible	Option to enroll in HFP 1.0 or HFP 2.0 depending on which HFP pilot is active.
3	Commercial V1G and V2G	All	Not Eligible	Eligible	Continuous support of both existing and new BEV customers through Phase 2 VGI pilots until HFP 2.0 is ready to enroll BEV customers.

- 4 Under HFP 2.0, to facilitate new HFP applications for customers
 5 who are planning to enable bi-directional vehicle charging and export
 6 electricity to the grid, PG&E plans to leverage the existing application
 7 process for these customers through PG&E's Your Projects portal,
 8 which supports enabling non-NEM exports in accordance with Electric
 9 Interconnection Rule 21. Customers taking service on PG&E's BEV
 10 rates, including BEV-1 and BEV-2, would be eligible under HFP 2.0
 11 following the conclusion of the VGI Pilots as shown in Table 2-6, below.
 12 Residential EV customers are already eligible for the current HFP Pilot
 13 and would remain so for the HFP 2.0 pilot.

TABLE 2-6
PROPOSED CHANGE TO RATE ELIGIBILITY
UNDER HFP 2.0 VS. CURRENT STATE FOR VGI CUSTOMERS

Line No.	Customer Class	Eligible Rates	Current HFP Pilots (HFP 1.0)	Current Phase 2 of VGI Pilots	HFP 2.0
1	RES	E-ELEC, EV2A	Yes	Yes	Yes
2	BEV	BEV-1, BEV-2	No	Yes	Yes

If the Emergency Load Reduction Program (ELRP) continues to be funded after 2027, PG&E also proposes to allow dual participation for V2G customers in ELRP subgroup A5 under the HFP 2.0 pilot structure. Enrollment in ELRP subgroup A5—which applies to EV and VGI customers—is currently mandatory for VGI Pilots in order to enable participation by a broader range of Electric Vehicle Supply Equipment (EVSE) models. ELRP allows a Rule 21 certification exemption to UL 1741 which allows more models of bi-directional chargers to interconnect under Rule 21.³⁵ Allowing dual participation would avoid forcing customers to choose between an established program with predictable benefits (a minimum number of hours at a set kW incentive under ELRP A5)³⁶ and participation in HFP 2.0.

CPUC Resolution (Res.) E-5326 approved a method to reduce the risk of double compensation for ELRP load response under Phase 2 of the VGI Pilots.³⁷ This approach included a calculation process to remove ELRP A5 compensation from the HFP credit. For HFP 2.0, PG&E plans to build on this general framework and refine the methodology as appropriate to reflect pilot learnings, future rate design changes, and Commission guidance.

³⁵ Rule 21, Sheet 184, requires the latest UL certification level EVSE model for interconnection, available at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_RULES_21.pdf (accessed May 28, 2026). D.21-12-015, Attachment 2, p. 6, Summer Reliability introduces ELRP A5 subgroup and exemption.

³⁶ ELRP currently has a minimum of 30 hours and a \$2/kW incentive. These details may change in the bridge funding decision expected in R.25-09-004.

³⁷ Res.E-5326, pp. 15-17.

7. Rate Eligibility

a. Learning: Rates With Technology Requirements Constrain Participation

PG&E has found that the technology requirements for the two residential electric rates that are eligible for HFP participation, E-ELEC and EV2A, have constrained adoption for customers who might be able to respond to hourly prices, but do not have any of the technologies needed to qualify for these rates. To take service on E-ELEC, PG&E customers must have one of the following technologies: electric heat pump for water heating or space heating/cooling; behind-the-meter (BTM) storage, or EV charging equipment.³⁸ Customers on EV2A must have either an EV or BTM storage system.³⁹ There are, however, customers with none of these technologies who are interested in, and may be able to respond to, hourly price signals. For example, customers with automated thermostats to control heating, ventilation, and air conditioning systems.

b. Proposed Change: Add E-TOU-D to Residential Rates Eligible for HFP

PG&E proposes to expand eligibility for HFP to residential customers who take service on E-TOU-D which does not have technology requirements. As described in Section E.6 of this chapter above, PG&E believes customers taking service on the BEV rates should be eligible for participation in HFP 2.0 from 2029-2031.

Table 2-7 shows the revised rate eligibility proposed for PG&E's HFP 2.0 pilot.

³⁸ Electric Schedule E-ELEC, Sheet 1, available at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHS E-ELEC.pdf (accessed May 28, 2026). Additionally, customers who take service on PG&E's Solar Billing plan (Net Billing Tariff) are required to take service on E-ELEC. Electric Schedule NBT, NBT Service, Sheet 1, available at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHS NBT.pdf (accessed May 28, 2026).

³⁹ Electric Schedule EV2, Residential Time-of-Use Service for Plug-in EV Customers, Sheets 1 and 7, available at: [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHS EV2%20\(Sch\).pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHS EV2%20(Sch).pdf) (accessed May 28, 2026).

TABLE 2-7
PROPOSED RATE ELIGIBILITY UNDER HFP 2.0 VS. CURRENT STATE

Line No.	Customer Class	Current HFP Pilots (HFP 1.0)	Current Phase 2 of VGI Pilots	HFP 2.0
1	AG	AG-A1, AG-A2, AG-B, AG-C	None	AG-A1, AG-A2, AG-B, AG-C
2	RES	E-ELEC, EV2A,	EV2A	E-ELEC, EV2A, E-TOU-D
3	COM	B-6, B-10, B-19, B-20	B-6, B-10, B-19, B-20	B-6, B-10, B-19, B-20
4	BEV	None	BEV-1, BEV-2	BEV-1, BEV-2

8. Customer Protections

PG&E recognizes that customer protection measures are important elements of pilot RTP rate offerings. RTP rates are designed to expose customers to some level of market price volatility to encourage load reduction during periods of grid stress and to encourage use of electricity during periods of more abundant electricity supply and/or grid availability. PG&E is concerned, however, that exposing customers to extreme market prices without some limits on that exposure may be asking participating customers to take on too much price risk. Given climate change and geopolitical instability that can increase natural gas and electricity prices, periods of sustained very high electricity prices in California are a possibility.

In D.25-08-049, the CPUC asserted the importance of customer protections for RTP rate offerings.⁴⁰ In that Decision, the CPUC allowed the Investor-Owned Utilities (IOU) flexibility in what customer protection approach to use.⁴¹ Further IOU perspectives on customer protection approaches have been provided in SCE's RTP Rate Application (A.24-06-014 and related A.24-12-008) and San Diego Gas & Electric Company's (SDG&E) RTP Rate Application (A.26-02-001), submitted in response to D.25-08-049.

In its original Application from October 2025, SCE proposed subscriptions as the primary mechanism to provide customer protection. On March 25, 2026, the ALJ in that proceeding issued a ruling which directed

⁴⁰ D.25-08-049, p. 143, Conclusion of Law (COL) 26.

⁴¹ D.25-08-049, p. 144, COL 29.

1 SCE to respond to various topics, including how alternative customer
 2 protection approaches might impact implementation costs and timing.⁴² In
 3 its response, SCE evaluated implementation costs and timing associated
 4 with two alternative approaches to subscriptions, bill limiters, and price
 5 limiters. Bill limiters would provide a cap on RTP customers' monthly or
 6 annual bills, and price limiters would put a floor and cap on hourly prices.
 7 SCE estimated that the bill limiter approach would add \$4 million in
 8 implementation costs compared to the subscription approach and \$7 million
 9 in costs compared to the price limiter approach. The bill limiter approach
 10 also would increase implementation timelines by 6-12 months compared to
 11 the price limiter approach.⁴³ In its RTP application (A.26-02-001), SDG&E
 12 recommends price limiters as a bill protection approach, citing similar
 13 concerns to SCE's about the complexity of bill limiters.⁴⁴

14 PG&E shares SCE and SDG&E's concerns about the implementation
 15 complexity and costs of the bill limiter approach and further considers that
 16 bill limiters may also complicate the optimization algorithms that load
 17 management providers would use to optimize bill savings, while also
 18 introducing undesirable incentives. With a bill limiter approach, along with
 19 considering the hourly price, the algorithms may also need to consider
 20 whether cumulative charges will reach the limit set for a given time period,
 21 and if they will, the incentive to reduce load may be compromised.

22 With regard to price limiters, PG&E notes that electric service providers
 23 in Europe have used price limiters as a customer protection element of their

⁴² A.24-06-014 (consolidated with A.24-12-008), ALJ's Ruling Modifying the Proceeding Schedule Including the Addition of Supplemental Testimony (Mar. 25, 2026).

⁴³ A.24-06-014 (consolidated with A.24-12-008), Testimony of SCE in Support of: (1) Application for Approval of Large Power Dynamic Pricing Rate and (2) Application for Approval of Marginal Cost-Based Dynamic Pricing Rates in Compliance with Decision 22-10-022 and Load Management Standards, Exhibit 06 – Supplemental Testimony Responding to Questions Posed in ALJ's Ruling Dated March 25, 2026 (Apr. 24, 2026), p. 23, Table 3.

⁴⁴ A.26-02-001, Prepared Testimony of Jeff DeTuri on Behalf of SDG&E, Chapter 4 – Customer Protection (Feb. 2, 2026), p. 3.

hourly dynamic rate offerings.⁴⁵ Some electricity service providers have instituted price limiters in response to the high electricity prices that resulted from the increased demand associated with recovery from the COVID-19 pandemic, high natural gas prices driven by the Russian invasion of Ukraine in 2022, along with other factors.⁴⁶ Price limiters are easier to implement but may not protect customers during periods of sustained high prices.

As is explained in Section E.2 of this chapter, PG&E believes that subscriptions also introduce significant challenges. PG&E is thus recommending a fourth approach to providing customer protection, an “Exit Ramp” proposal that would shield customers from sustained periods of high prices (and resulting high bills). This approach is detailed in Chapter 3 (Rate Design), Section F.

9. CCA Engagement

PG&E recognizes that CCA participation in RTP rate offerings is important, given that avoiding generation costs is a key potential value stream from RTP Rates and approximately half of PG&E’s load is served by CCAs that supply energy to their customers.⁴⁷ PG&E is pleased that nine CCAs in PG&E’s service area are participating in PG&E’s RTP pilots.

PG&E does not propose funding for continuation of CCA incentives as part of this Stop Gap Proposal because it appears that CCAs are now leveraging participation in PG&E’s RTP pilots to meet LMS guidance as described in their LMS compliance plans approved by the CEC, and CCAs are responsible for their own procurement costs and how they reflect those costs in their generation rates. CCAs are subject to the CEC’s LMS

⁴⁵ See, e.g., Octopus Energy in the United Kingdom’s “Octopus Tracker” offering, available at: <https://octopus.energy/tracker-fags/> (accessed May 28, 2026) and Enel Italy’s “Flex Control Luce” offering, available at: <https://www.enel.it/en-us/offerte-luce/enel-flex-control-luce> (accessed May 6, 2026).

⁴⁶ Alpino, et al., Navigating the electric storm: Assessing policy responses to Europe’s energy shock, The Electricity Journal, Volume 38, Issue 4 (Dec. 2025), available at: <https://www.sciencedirect.com/science/article/abs/pii/S1040619025000193> (accessed May 8, 2026).

⁴⁷ CPUC, Community Choice Aggregation and Energy Service Provider Formation Status Report (Feb. 28, 2024), p. 7, Figure 2, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/community-choice-aggregation-and-direct-access/2024-status-report-on-community-choice-aggregation-formation.pdf> (accessed May 26, 2026).

guidance to submit hourly dynamic rates proposals to their governing authorities and make dynamic rates available to customers by July 1, 2027, (if approved by their rate-making authorities).⁴⁸ CCAs are largely relying on the PG&E RTP pilots for this, which is supported by PG&E's pilot price and billing infrastructure for which CCAs are not charged. Of the 10 CCAs in PG&E's service area to which the LMS apply, nine have cited participation in PG&E's HFP pilots as a pathway in their LMS Compliance Plans that were approved by the CEC in 2025 and 2026.⁴⁹ For example Peninsula Clean Energy states "...PCE is participating in two of PG&E's HFP rate pilots as a more effective approach to LMS-compliant rate offerings."

Also a consideration is that, because the HFP Pilot 2.0 would have a "credit and charge" billing structure rather than the current "credit only" billing structure, as is explained Section E.1 of this chapter, CCAs will be less exposed to funding shortfalls from reconciliation of HFP customers' unbundled generation bills through the annual True-Up process.

F. Costs for the Stop Gap HFP Extension

PG&E requests approval of total incremental budget for the Stop Gap Proposal through Q1 2031 of \$26.5 million, as shown in column (d) of Table 2-8 below. This includes: costs to extend the current pilots (HFP 1.0) from December 31, 2027 to December 31, 2028 (column a), costs for proposed

⁴⁸ 20 CCR § 1623.1. Only "Large CCAs" with annual sales greater than 700 GWh per year are required to abide by the LMS guidance per 20 CCR, § 1621(c)(10).

⁴⁹ See CEC Docket 23-LMS-01, CCA Compliance Plans, 1) Ava Energy, Clean Version of Ava Community Energy Revised Load Management Standards Compliance Plan, TN # 264899 (docketed July 18, 2025), p.17; 2) San Jose Clean Energy, SJCE Revised LMS Compliance Plan, TN # 262497 (docketed Mar. 28, 2025), p.10; 3) Silicon Valley Clean Energy, SVCE LMS Plan (Public Version), TN # 255393 (docketed Apr. 2, 2024), p. 9; 4) Central Coast Community Energy (3CE), Revised Load Management Standards Plan, TN # 266039, (docketed Sept. 17, 2025), p. 7; 5) Peninsula Clean Energy, Peninsula Clean Energy's Revised LMS Compliance Plan, TN # 262291, (docketed Mar. 21, 2025), p. 6; 6) Valley Clean Energy, VCE Revised Load Management Standards Compliance Plan, TN # 262691 (docketed Apr. 15, 2025), p. 17; 7) Marin Clean Energy, MCE Revised Load Management Standards Plan, TN # 268185, (docketed Jan 7, 2026), p. 6; 8) Pioneer, Pioneer Revised Load Management Standards Plan, TN # 266073 (docketed Sept. 18, 2025), pp. 7-8; 9) Clean PowerSF, CleanPowerSF Revised Load Management Standards Plan, TN # 266041, (docketed Sept. 17, 2025), at p. 36, available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-lms-01> (accessed May 28, 2026).

1 changes to the pilot outlined in this testimony that would be implemented in
2 2028, and continuing the adjusted pilot (HFP 2.0) from January 2029 through
3 2031 (column c), less remaining budget from the current HFP pilot (column b).
4 Column "e" in the table shows the total budget available for the Stop Gap Period
5 from 2028-2031, or \$29.2 million, including unused authorized budget PG&E is
6 requesting to carry over from the current HFP pilots, which PG&E estimates will
7 be \$2.7 million.

8 The cost estimates presented here are based on PG&E's proposed
9 implementation approach to the Stop Gap HFP Extension presented throughout
10 this testimony. PG&E requests the opportunity to file a Tier 2 Advice Letter
11 within 45 days of the Final Decision to update cost estimates based on the
12 CPUC's Final Decision on this proposal. This is important as the final rate and
13 program design that PG&E is required to implement may require substantively
14 higher or lower costs to implement than the rate and program design that is
15 presented here in this testimony. PG&E recognizes that the incremental budget
16 requested is a substantial sum. However, PG&E is making this request to be
17 responsive to the CPUC directive in recognition of the CEC's LMS provisions to
18 make dynamic rates available to customers by and continuing after January 1,
19 2027. PG&E believes the changes to the pilot outlined in this testimony will
20 provide an improved customer experience for pilot participants and will structure
21 the pilot in a way that will help PG&E, policy makers, and stakeholders learn
22 more about how dynamic rates will fit into California's overall load management
23 strategy.

24 PG&E's approach of using a third-party billing service and software can
25 allow iterations on the pilot rate design based on pilot learnings, such as those
26 PG&E is proposing in this testimony. Enabling those changes will help PG&E
27 refine RTP rate design before investing in implementing RTP rates in our
28 primary billing systems. Performing HFP billing using the current vendor-based
29 billing system does, however, have limitations, on the number of customers that
30 can be managed and enrolled on the HFP rates. These limitations are driven by
31 constraints in operational capacity necessary to accommodate complex rate
32 modifier combinations, ensure billing accuracy, manage billing exceptions
33 requiring manual intervention, and ensure data quality. Given these constraints,
34 PG&E has sized the HFP 2.0 pilot to serve up to 16,000 enrolled service

1 agreements. For every 2,000 incremental enrolled service agreements above
2 16,000, PG&E expects to incur approximately \$260,000 annually in incremental
3 resource costs. Should enrollment exceed the 16,000 threshold, PG&E
4 requests the opportunity to file a Tier 2 Advice Letter to request additional
5 funding that may be needed to support higher enrollment levels.

TABLE 2-8
SUMMARY OF COSTS FOR STOP GAP HFP EXTENSION PROPOSAL

Line No.	Cost Area	Cost to Extend HFP Pilots through 2028 (a)	Estimated Remaining Funds from Current Budget by EOY 2028 (b)	Cost to Extend Adjusted HFP 2.0 Pilot from Jan 2029- 2031 (c)	Total Incremental Cost from 2028-2031 (d = a+c)	Total Available Stop Gap Budget from 2028-2031 (e=a+b+c)
1	Pricing, Billing, and Customer Relationship Management Systems	\$2,054,500	–	\$6,102,500	\$8,157,000	\$8,157,000
2	Program Administration and Customer Support	3,459,600	–	11,371,500	14,831,100	14,831,100
3	Funding for ASP Engagement	–	\$2,600,000	1,000,000	1,000,000	3,600,000
4	<i>Sub Total for Implementation (lines 1-3)</i>	\$5,514,100	\$2,600,000	\$18,474,000	\$23,988,100	\$26,588,100
5	Measurement and Evaluation	–	100,000	2,300,000	2,300,000	2,400,000
6	Marketing Education and Outreach	50,000	–	125,000	175,000	175,000
7	<i>Total (lines 4-6)</i>	\$5,564,100	\$2,700,000	\$20,899,000	\$26,463,100	\$29,163,100

G. Conclusion and Summary of PG&E's RTP Proposals

PG&E's RTP pilots have seen robust enrollment and active engagement by customers and ASPs, but the current pilot structure is presenting challenges for customers and ASPs to respond to hourly flex prices. The changes proposed in this testimony for an "HFP 2.0" as part of PG&E's Stop Gap proposal attempt to address these challenges. By removing subscriptions, HFP 2.0 will provide a clearer price signal and reduce the complexity of achieving bill savings. By moving to a "credit and charge" billing structure that more appropriately balances reward and risk, HFP 2.0 will provide a more meaningful incentive to manage load to the HFP rate. Challenges with customer recruitment and performance by ASPs will be addressed by developing more focused contractual relationships with selected ASPs through an RFP process. Barriers to HFP enrollment presented by technology-specific rate eligibility restrictions and dual participation in DR programs will be addressed. PG&E expects that HFP 2.0 will provide an improved customer experience for pilot participants and will help PG&E, policy makers, and stakeholders learn more about how dynamic rates will fit into California's overall load management strategy. The remaining chapters of this testimony provide more details on the various elements of PG&E's Stop Gap HFP extension proposal.

PG&E respectfully requests approval of its HFP Stop Gap Extension proposal, the key elements of which are outlined in Table 2-9 below:

**TABLE 2-9
SUMMARY OF PG&E'S PROPOSALS FOR STOP GAP HFP EXTENSION PROPOSAL**

Line No.	Topic (Testimony Reference)	PG&E's Proposal
1	Billing Structure (Chapter 2, Section E.1)	Change from a "credit only" to a "credit and charge" billing structure to provide more meaningful incentive for customers to manage to the hourly flex price.
2	Subscriptions (Chapter 2, Section E.2 and Chapter 3, Section E)	Discontinue subscriptions and recover embedded costs through RNA to provide a clearer price signal.
3	Transactive Pricing (Chapter 3, Section E)	Remove transactive pricing due to limited use by existing pilot participants.
4	Regulatory Process for Future Rate Iteration (Chapter 2, Section E.3 and Chapter 3, Section G)	Allow for iteration on future HFP rate design through a Tier 2 Advice Letter process to enable more nimble response to learnings.
5	ASP Engagement (Chapter 2, Section E.4)	Fund ASPs through contractual selection process that will enable more focused engagement with ASPs to improve customer recruitment and performance
6	Dual Participation (Chapter 2, Section E.5 and Chapter 4)	Develop consistent guidance for dual participation as part of the EDROIR or allow Advice Letter if that guidance is not provided in time for implementation of the revised HFP 2.0 proposed in this testimony.
7	Integration of V2G Customers (Chapter 2, Section E.6)	Ensure continued access for V2G charging customers to HFP once Phase 2 of the VGI Pilots sunsets.
8	Rate Eligibility (Chapter 2, Section E.7)	In addition to continuing the rate eligibility in place for the current HFP 1.0 pilot, PG&E requests that the Commission allow customers taking service on additional rates, E-TOU-D and the BEV rate, to participate in HFP.
9	Customer Protections (Chapter 2, Section E.8 and Chapter 3, Section F)	Approve PG&E's proposal to implement an "Exit Ramp" to protect customers during sustained periods of extreme high electricity prices.
10	Timing (Chapter 2, Section D)	Allow PG&E to extend the current HFP 1.0 Pilot through 2028, if needed, before a revised HFP 2.0 pilot can be implemented by 2029 Allow PG&E to provide a revised HFP 2.0 pilot from 2029-2031, with the option to transition customers before 2029 to the revised HFP 2.0 pilot if regulatory and implementation timelines allow.

TABLE 2-9
SUMMARY OF PG&E'S PROPOSALS FOR STOP GAP HFP EXTENSION PROPOSAL
(CONTINUED)

Line No.	Topic (Testimony Reference)	PG&E's Proposal
11	Implementation (Chapter 5)	Allow PG&E to rollover \$2,600,000 in anticipated remaining funding for ASP incentives at the end of 2028 to fund further ASP engagement from 2029-2031. Approve incremental funding of \$23,988,000 for implementation of the Stop Gap HFP Extension from 2028-2031. Allow PG&E to submit a Tier 2 Advice Letter to update cost estimates based on CPUC's Final Decision on this proposal. This is important as the final rate and program design that PG&E is required to implement may require substantively higher or lower costs to implement than the rate and program design that is presented here in this testimony.
12	Marketing Education and Outreach (ME&O) (Chapter 6)	Approve \$175,000 for ME&O support for the Stop Gap HFP Extension period
13	Measurement and Evaluation (M&E) (Chapter 7)	Allow PG&E to rollover \$100,000 in anticipated remaining funding for M&E at the end of 2028 and approve \$2,300,000 for M&E for the Stop Gap HFP Extension from 2028-2031 to enable robust learnings that can inform post-pilot PG&E RTP proposals
14	Cost Recovery (Chapter 8)	Approve the following cost recovery approach: Differences between the HFP and OAT bills (credits and charges) will be recorded to the Distribution Revenue Adjustment Mechanism for the distribution component and to the Energy Resource Recovery Account for generation. For implementation costs, track and record to the Dynamic and Real-Time Pricing Memorandum Account for recovery in the GRC, subject to reasonableness review.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 3
STOP GAP RATE DESIGN

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 3
STOP GAP RATE DESIGN

TABLE OF CONTENTS

A. Introduction (Witness: Streib)	3-1
B. Summary of Proposal	3-1
C. Organization of this Chapter	3-1
D. Overview of the Existing RTP	3-2
E. Rate Design Changes Proposed for HFP 2.0	3-3
F. Customer Protections	3-5
G. Future Rate Design Improvements (Witness: Dhar)	3-7
H. Conclusion	3-8

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 3
STOP GAP RATE DESIGN

A. Introduction (Witness: Streib)

This testimony presents Pacific Gas and Electric Company's (PG&E) Real Time Pricing (RTP) rate proposals that would be implemented in 2029 (or sooner if possible) as part of PG&E's Stop Gap Proposal to extend its Hourly Flex Pricing (HFP) pilots after their current planned end date of December 31, 2027. Details on this process and timeline are presented in Chapter 2 of this Testimony. The proposed changes for an "HFP 2.0" build on the RTP rate design and customer learnings and feedback gathered from the current pilots to improve the RTP design and provide an improved customer experience while also minimizing operational costs.

This chapter also presents PG&E's proposal to establish an advice letter (AL) process to maintain the flexibility for PG&E to propose additional rate design changes during the duration of the stop-gap period, should ongoing performance evaluation and new evidence indicate such changes are warranted.

B. Summary of Proposal

PG&E is requesting the California Public Utilities Commission (Commission) to approve the following proposals:

- 1) Rate design changes for the stop-gap period:
 - a) Removal of subscription;
 - b) Removal of Transactive Pricing;
 - c) Customers will be subject to any additional billing charges under Hourly Flex Pricing (HFP) that exceed their Otherwise Applicable Tariff (OAT) bill; and
- 2) A Tier 2 AL process for future modifications to rate design that deviate from the approved price design.

C. Organization of this Chapter

The remainder of this chapter is organized as follows:

- Section D – Overview of the Existing RTP;
- Section E – Rate Design Changes Proposed for HFP 2.0;
- Section F – Customer Protections;

- 1 • Section G – Future Rate Design Improvements; and
- 2 • Section H – Conclusion.
- 3 The witness responsibilities for this chapter are as follows:
- 4 • Tysen Streib – All sections of this chapter with the exception of those noted
- 5 below; and
- 6 • Amitava Dhar – Section G (Future Rate Design Improvements).

7 **D. Overview of the Existing RTP**

8 A detailed description of PG&E's HFP 1.0 rate design can be found in

9 Exhibit (PG&E-5) Chapter 2 of PG&E's October 29, 2025 testimony.¹ A

10 high-level summary of its key features can be found in the table below.

TABLE 3-1
SUMMARY OF PROPOSED RTP ELEMENTS

Line No.	RTP Feature	Existing Pilot Rate Design (HFP 1.0)	Proposed Rate Design Changes (HFP 2.0)
1	Marginal Energy Cost (MEC)	California Independent System Operator (CAISO) day ahead hourly price at the PG&E DLAP, plus a constant line loss factor.	Same
2	Marginal Generation Capacity Cost (MGCC)	A sigmoidal price curve based on the forecasted adjusted net CAISO load. Designed to collect the average MGCC value over the entire year.	Same
3	Marginal Distribution Capacity Cost (MDCC)	A sigmoidal price curve based on the forecasted load of a representative circuit. Each of PG&E's circuits is mapped to a cluster of circuits that have similar load profiles. A single circuit is chosen that best represents the collective load shape of the entire cluster. Designed to collect the average Primary MDCC value over the entire year. Other MDCC components are not time-varying and are not part of the dynamic rate.	Same
4	Non-Marginal Costs	Collected through subscription.	Collected through a revenue neutral adder (RNA) that varies by rate schedule and occasionally varies by time-of-use (TOU) period.

1. A.24-09-014, *Pacific Gas and Electric Company 2023 General Rate Case Phase II Supplemental Testimony Exhibit (PG&E-5) Real-Time Pricing Proposal* October 29, 2025.

**TABLE 3-1
SUMMARY OF PROPOSED RTP ELEMENTS
(CONTINUED)**

Line No.	RTP Feature	Existing Pilot Rate Design (HFP 1.0)	Proposed Rate Design Changes (HFP 2.0)
5	Export Compensation	Equal to the dynamic MEC, MGCC, and MDCC values. Because the dynamic price is marginal only, the exports are valued at the same price as consumption. Exports covered by subscription are compensated at the OAT rate.	Net Energy Metering (NEM) 1.0 and 2.0: equal to the dynamic price and includes the RNA unless the exports exceed the paired storage (NEMPS) limits. Net Billing Tariff: equal to their OAT compensation. Non-NEM: equal to the dynamic price without the RNA.
6	Subscription Protection	Customers are given a predefined load profile, either based on their historical usage or a class average, which is charged at the customer's OAT. Only deviations from the assumed load profile (above or below) are charged at the dynamic rate. Each month, the load profile may be scaled after the fact so that the total usage in the subscription profile matches the customer's actual usage.	No subscription.
7	Bill Protection	Customers are shadow billed on the HFP rate. After one year the customer is given a credit if their performance on the HFP rate is better than their OAT rate. No extra charge is given to customers that perform worse.	Customers are still shadow billed but will be responsible for paying a charge at the end of their True-Up period if their HFP bill is higher for the 12 monthly billing cycle period (or more frequent True-Up period if operationally feasible). Credit is still given for superior performance on the HFP rate.
8	Forward Transactions	Agricultural customers have the opportunity to lock in prices for specific hours up to 7 days in advance.	No forward transactions.
9	Customer Protections	Provided through subscription and "credit-only" billing structure.	"Exit ramp" policy which automatically returns customers to TOU (OAT) pricing during catastrophic events..

1 E. Rate Design Changes Proposed for HFP 2.0

2 The changes PG&E is proposing are primarily driven by the combined
3 objectives of improving the customer and Automated Service Provider (ASP)
4 experience, better enabling load response through a clearer, more
5 understandable price signal, and minimizing operational costs.

6 First, PG&E is proposing to remove the subscription component. As
7 discussed in Exhibit (PG&E-5) Chapter 2, customers are largely dissatisfied with
8 the subscription component due to the complexity to the rate without a
9 commensurate level of benefit. PG&E may consider offering subscriptions as an

1 optional feature after HFP 2.0 based on further assessment and stakeholder
 2 feedback, but PG&E proposes not to include that optionality for HFP 2.0 to test
 3 the RNA in isolation and avoid confusion.

4 The removal of the subscription drives two other proposed changes: (1) the
 5 addition of an RNA as proposed in Exhibit (PG&E-5);² and (2) the removal of
 6 peak demand charges. The RNA will be a dollars-per-kilowatt-hour (\$/kWh)
 7 charge to collect the non-marginal (fixed) costs and will make the dynamic rate
 8 revenue neutral to the retail OAT rate. While the RNA will vary by rate schedule
 9 in order to maintain revenue neutrality, it will only vary by TOU period for those
 10 schedules whose TOU differences are already wider than marginal costs
 11 (typically residential and commercial EV rates and some agricultural schedules).
 12 Peak demand charges are no longer needed because all of the customers'
 13 usage will be subject to the dynamic rate, which already includes the capacity
 14 costs represented by demand charges.

15 As is discussed in Chapter 2, PG&E proposes under HFP 2.0 to start
 16 charging customers if their total performance (credits plus charges at 12-month
 17 true-up) results in net charges.

18 PG&E is also proposing to remove the forward transaction element
 19 (transactive pricing) which is currently available only to agricultural customers.
 20 Only a small fraction of agricultural customers – is using this feature.

21 Data for the year 2025 demonstrates persistent low adoption, engagement,
 22 and realized value from the transactive pricing platform, supporting its proposed
 23 discontinuation. Of 123 enrolled agricultural accounts, only 32 customers
 24 logged into the platform at least once during the year, indicating limited interest.
 25 Even among these active users, engagement was modest, averaging 3.75
 26 logins per customer per month, but actual utilization of the transactive prices
 27 was much lower, with an average of only 3.56 transactions created per active
 28 customer per year, suggesting the platform is not a core operational tool for
 29 most participants. Qualitative feedback from the ASP for agricultural customers
 30 further indicates that low usage is driven by customers' operational barriers
 31 rather than lack of awareness, including time constraints, limited labor
 32 availability, inconsistent on-farm execution, crop irrigation requirements, and

2. See PG&E 2023 GRC II Supplemental Testimony, Exhibit (PG&E-5), pp. 2-29 to 2-40.

1 water allocation restrictions that materially limit customers' ability to respond to
2 price signals.

3 This feature is also very expensive to maintain, and PG&E does not believe
4 it provides enough value at this time to continue. PG&E will continue to discuss
5 this feature with customers, both in and out of the agricultural class, to determine
6 if this feature should be enabled after HFP 2.0. Together, the quantitative
7 performance metrics and documented customer feedback indicate that
8 transactive pricing does not provide commensurate benefits to justify continued
9 support.

10 In PG&E's 2023 Load Management Standard (LMS) Compliance Plan,
11 PG&E presented a plan to incorporate a time-varying transmission price
12 component into its RTP rate by January 1, 2027.³ PG&E needs to delay this
13 timing to address challenges experienced in the pilots with the design and
14 application of the time-varying distribution price component before further
15 complicating the dynamic price signal by adding a time-varying transmission
16 price component. PG&E intends to file an extension for compliance with the
17 LMS with the CEC on or around August 1, 2026.

18 **F. Customer Protections**

19 The removal of the subscription option takes away a measure of customer
20 protection against long periods of sustained high prices. The guidance given in
21 Decision (D.) 25-08-049 says that the IOUs should have customer protections
22 that "[p]rotect customers against extended periods of high dynamic prices which
23 cannot be mitigated by load shift."⁴ For example, customers should be
24 protected from extended extreme events like the 2021 Texas power crisis tied to
25 Winter Storm Uri. PG&E agrees that this should be the primary type of

3 Pursuant to Title 20, California Code of Regulations Section 1623.1(a), on March 18, 2025, Pacific Gas and Electric Company (PG&E)'s submitted to the California Energy Commission (CEC) its revised LMS Compliance Plan, PG&E's Second Revised Load Management Standards Compliance Plan, current as of January 1, 2025, with minor grammatical revisions added on February 24, 2025 (CEC Docket 23-LMS-01, TN # 262235 (docketed Mar. 18, 2025)). This plan was approved by the CEC, in its Signed Orders Approving LMS Compliance Plans for PG&E, SCE, SDG&E, VCE, SJCE, and PCE from the May 8, 2025 Business Meeting. CEC Docket 23-LMS-01, TN # 263178 (docketed May 16, 2025), available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-lms-01> (accessed May 29, 2026).

4 D.25-08-049, p. 119.

1 circumstance that customer protections should guard against and not simply
 2 shorter events such as a brief summer heat wave during which prices may get
 3 extremely high in the evening but are not unreasonable during the day.

4 Therefore, PG&E proposes the “exit ramp” concept that PG&E originally
 5 articulated in its 2020 General Rate Case Phase II RTP Rebuttal testimony.⁵
 6 The basic concept is that HFP 2.0 prices should automatically revert to a given
 7 customers’ OAT prices for the following day if **either** of the following
 8 two conditions are met:

- 9 1) The day-ahead energy plus generation capacity prices in a single day
 10 contain seven or more hours with a combined price of \$2.00/kWh or higher;
 11 or
- 12 2) The average of the energy plus generation capacity prices for all 24 hours in
 13 the day is \$0.70/kWh or more for three days in a row.

14 If the exit ramp were automatically triggered, then all customers on HFP 2.0
 15 would have their dynamic prices reverted to their OAT for all price components
 16 until these conditions are no longer met and HFP 2.0 prices can resume. This
 17 process protects customers from situations where it would be unreasonable to
 18 have customers subjected to an extreme market while still preserving the very
 19 strong price signal during shorter duration events when the grid is stressed and
 20 load shifting is valuable.

21 As is discussed in Chapter 2 Section E.8, PG&E also considered the bill
 22 limiter customer protection option but determined that the operational cost would
 23 likely be very high and could complicate customer decisions about load
 24 response. Also, depending on the level of the bill limiter, there may be too much
 25 of a revenue shortfall with this option and it may create the same disincentives
 26 that the current bill protection in HFP 1.0 provides. D.25-08-049 says that the
 27 customer protection options should “[e]nsure stability of revenue recovery and
 28 minimize structural rate impacts.”⁶ The proposed exit ramp protection would
 29 handle revenue recovery like standard TOU rates and any under-collection
 30 would be recovered through the true-up of PG&E’s respective two-way revenue

5 A.19-11-019, Exhibit (PG&E-RTP-2), pp. 4A-14 to 4A-15.

6 D.25-08-049, p. 119.

1 adjustment mechanism balancing accounts for distribution for all customers and
2 for generation for bundled customers.

3 **G. Future Rate Design Improvements (Witness: Dhar)**

4 The rate design changes proposed in the previous section are largely
5 focused on improving customer experience and removing undue complexity
6 from HFP. However, as described in Exhibit (PG&E-5) Chapter 2,⁷ the
7 distribution system is fundamentally different from the generation system which
8 introduces several complexities for deriving distribution prices. PG&E has
9 already made refinements during the course of the HFP pilots, including
10 recalibrating its sigmoid pricing models for the distribution price component, to
11 incorporate learnings from performance and customer experience, as well as to
12 maintain stability and reliability of prices. However, monitoring and maintaining
13 these price models has proven to be a significant operational challenge and it is
14 not clear if the current structure provides optimal customer experience and/or
15 the appropriate load shifting incentives.

16 For the purposes of this testimony, PG&E plans to continue using the
17 current rate design structure for HFP 2.0 distribution prices. However, looking to
18 the future, PG&E believes that streamlined, simplified, and more stable prices
19 may be generally desirable for customer understanding and improved
20 experience which may encourage wider customer participation. Thus, PG&E
21 plans to research alternate rate design structures with that process in mind.
22 Such refinements may include but are not limited to exploring rate design at
23 higher load aggregation (such as substation or system-level), blending historical
24 rate signals with dynamic forecast-based signals, or designing rates that follow
25 smoother trend-based signals. PG&E will also investigate the potential to
26 increase fixed charges for HFP participants in order to reduce non-coincident
27 demand and energy charges.

28 The primary challenge preventing PG&E from proposing more fundamental
29 changes to rate design in this application is the uncertainty around the general
30 implications of such modifications. A key element of that uncertainty is that it is
31 still unclear how customer responses to RTP rates translate into material,
32 quantifiable reductions in distribution investment needs and/or better utilization

⁷ Exhibit (PG&E-5), pp. 2-15 to 2-18, Section H-2.

1 of the existing system without incurring new costs. The planned measurement
2 and evaluation studies described in Chapter 7 of this exhibit will provide
3 important data points for continued learnings, which may help inform if moving
4 away from the current pricing model is warranted.

5 Given that the Commission's decision on this application will set authority on
6 HFP rates for the next several years, PG&E desires the flexibility to submit
7 alternate rate design proposals not detailed in this application if and when PG&E
8 has gathered sufficient evidence to support the viability of such alternate rate
9 design proposal(s). PG&E requests that the Commission approve the use of a
10 Tier 2 AL as the appropriate regulatory path for submitting such a proposal. A
11 Tier 2 AL ensures that stakeholders and the Commission have an opportunity to
12 review and comment on a proposal without the added administrative burden of a
13 new ratemaking application. PG&E believes that the AL process provides the
14 right balance for facilitating stakeholder engagement while preserving flexibility
15 for PG&E to iterate and improve its rate design as RTP offerings mature across
16 California.

17 **H. Conclusion**

18 PG&E respectfully requests the Commission to approve the following
19 proposals:

- 20 1) Rate design changes for the stop-gap period:
 - 21 a) Removal of subscription;
 - 22 b) Removal of Transactive Pricing;
 - 23 c) Customers being subject to any additional billing charges under HFP
24 that exceed their OAT bill; and
- 25 2) A Tier 2 AL process for future modifications to rate design that deviate from
26 the approved price design.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 4
DUAL PARTICIPATION

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 4
DUAL PARTICIPATION

TABLE OF CONTENTS

A. Background	4-1
B. Hourly Flex Pricing (HFP) Learnings	4-3
C. Policy Recommendation	4-4

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 4
DUAL PARTICIPATION

A. Background

Pacific Gas and Electric Company's (PG&E) Real-Time Pricing (RTP) rate pilots were designed to understand how customers can respond to RTP signals, including measuring how customers change load in response to prices. In that context, "dual participation" refers to simultaneous customer participation in an RTP pilot and one or more other load management programs. This topic matters for two related reasons. First, to preserve the integrity of the pilots' learning objectives, PG&E must be able to measure RTP-driven load impacts without "double counting" the effects of other programs. Second, PG&E must ensure the same load reduction is not compensated for more than once by different programs ("double compensation"). For these reasons, the RTP pilots authorized to date have generally limited dual participation to specified programs and subgroups, but the specific set of permitted programs has not been consistent across pilots, and dual participation between RTP rates and other load management and technology incentive programs is an increasingly complicated issue.

PG&E's existing dual participation policy in the Hourly Flex Pricing (HFP) pilots reflects the California Public Utilities Commission's (CPUC or Commission) authorization for limited dual participation, combined with PG&E's operational approach for preventing double compensation where it has sufficient information to do so. As implemented, the HFP structure allows dual participation with certain Critical Peak Pricing (CPP) programs (e.g., Peak Day Pricing and SmartRate™), certain electrification and time-of-use (TOU) rates that function as the customer's Otherwise Applicable Tariff (OAT) for subscription purposes (including E-ELEC and specified TOU schedules), Net

1 Energy Metering and Net Billing Tariff, and certain Emergency Load Reduction
2 Program (ELRP) subgroups.¹

3 Where dual participation is permitted, PG&E addresses potential double
4 compensation by adjusting the RTP bill credit so that the customer's comparison
5 against the shadow bill already reflects the value the customer received from the
6 other program.² These formulas are intended to reduce the risk of paying twice
7 for the same load reduction when the customer is receiving both RTP bill credits
8 and event-based bill credits or incentives administered by PG&E.

9 However, PG&E's ability to prevent double compensation is constrained
10 where PG&E lacks visibility into the customer's actual payments or bill credits
11 administered by other entities. PG&E does not have information about whether
12 a customer is in a Community Choice Aggregation (CCA) or other non-PG&E
13 event-based load-modifying program to address double compensation, and
14 PG&E similarly lacks customer-level payment information in contexts where
15 incentive payments to customers are controlled and administered by third parties
16 or aggregators. This lack of visibility is a major obstacle when customer
17 payment information is controlled by others (including CCAs, California Energy
18 Commission programs, third-party providers, and aggregators), particularly
19 where the information would be needed to administer the Commission's principle
20 against double compensation. At the same time, protecting confidential
21 information of entities operating programs that compete in the market is
22 important, especially where the CPUC does not have jurisdiction over those
23 entities' programs. Accordingly, PG&E has emphasized the need for more
24 universally applicable systems and processes to administer dual participation
25 rules while balancing other legitimate policy interests, including support for RTP
26 and gathering data for analysis, which PG&E anticipates will be addressed

1 See PG&E Advice Letter 7223-E-B. Rulemaking (R.) 25-09-004, PG&E's Opening
Comments on the Administrative Law Judge Gerstle Rulings on Demand Response
Staff Proposal on Bridge Year Funding (Apr. 30, 2026), p. 4, recommends that the
Commission close all ELRP subgroups, except for Subgroups A4 and A5.

2 For CPP participants, PG&E applies the following adjustment: RTP Bill Credit = MAX (0,
OAT TOU including CPP – shadow bill). Similarly, for customers dual participating in
the HFP pilots and ELRP Subgroups A1, A3, and A6, PG&E applies an analogous
adjustment that treats the ELRP incentive as part of the OAT comparison: RTP Bill
Credit = MAX (0, OAT TOU including ELRP incentive – shadow bill).

1 within the Enhanced Demand Response Order Instituting Rulemaking (EDROIR,
2 R.25-09-004).

3 Phase 2 of the Vehicle-Grid Integration (VGI) pilots presents a closely
4 related, but more challenging, dual participation implementation case because
5 ELRP Subgroup A5 (for Electric Vehicle and VGI aggregators) is required, and
6 PG&E does not calculate individual customer-level performance and incentives
7 for all customers participating in ELRP—particularly those who participate via
8 aggregations, including Subgroup A5. In instances where customers participate
9 via aggregations and the aggregator does not rely on PG&E to calculate
10 individual customer-level performance and incentives, PG&E has no visibility
11 into the arrangements between the aggregator and its customers, and therefore
12 cannot accurately address double compensation using the same approach that
13 can be applied for ELRP Subgroups A1 (non-residential customers), A3 (Rule 21
14 exporting Distributed Energy Resource customers), and A6 (residential
15 customers). For that reason, PG&E has described an interim approach in which
16 it will request Subgroup A5 aggregators to voluntarily provide the information
17 needed to calculate a customer's actual ELRP compensation to prevent double
18 compensation, or alternatively assume the customer receives the full ELRP
19 incentive—recognizing this creates an inconsistency that may be appropriate for
20 a first pilot phase, but should not set a precedent for future RTP rates.

21 **B. Hourly Flex Pricing (HFP) Learnings**

22 A key concern with current dual participation rules for HFP is that Large
23 Commercial and Industrial customers on the Base Interruptible Program (BIP)
24 cannot also participate in HFP. BIP incentives are more certain than potential
25 cost savings under HFP, which discourages their shift to the HFP pilot. BIP also
26 offers a valuable emergency grid service, with reliable and predictable load
27 reductions that provide California Independent System Operator visibility and
28 dispatchability, within a 15- or 30-minute notification. This makes BIP
29 complementary to HFP and HFP pilot participants should be allowed to dual
30 participate with careful assessment to ensure no double compensation or double
31 counting.

32 In addition, the existing methodology to prevent dual compensation between
33 HFP and the ELRP A5 Subgroup, currently applied under the VGI Pilots, may
34 require refinement as Battery Electric Vehicle and Vehicle-to-Everything

1 customers transition to HFP 2.0. The current approach was designed as a
2 conservative and administratively straightforward mechanism to mitigate
3 double-compensation risk, but experience to date suggests it may
4 disproportionately reduce HFP credits and discourage participation as
5 customers engage across multiple programs.

6 **C. Policy Recommendation**

7 PG&E supports addressing dual participation between Demand Response
8 (DR) programs and RTP comprehensively in EDROIR, where we can evaluate
9 these policies from a statewide perspective across a broader group of load
10 flexibility programs and rates in a consistent manner. PG&E also anticipates
11 that the EDROIR can enable the appropriate systems and processes to support
12 dual participation, allowing for a systematic approach instead of the manual
13 process in place today. To the extent that EDROIR may not fully scope or
14 resolve dual participation issues on the timeline needed to support near-term
15 RTP and DR program participation, this could unnecessarily constrain pilot
16 evolution and customer participation, and therefore requires flexibility. PG&E
17 therefore proposes that the Commission authorize, in the Stop-Gap decision, the
18 use of an advice letter process to refine or expand dual participation rules for the
19 Stop Gap pilots to ensure regulatory continuity and enable further learnings.
20 PG&E requests the Commission authorize this process if the EDROIR
21 addresses dual participation policy that would require adjustment of the dual
22 participation rules in place today in the RTP pilots, or if the EDROIR does not
23 fully address dual participation relevant to HFP 2.0 implementation. Such advice
24 letters would be limited to incremental, implementation-level adjustments,
25 including enabling or expanding dual participation between RTP and load
26 management programs. In the event the EDROIR does not fully address dual
27 participation with RTP pilots, PG&E requests the Commission authorize an
28 advice letter process to allow RTP pilot participants to extend dual participation
29 to include BIP and ELRP, informed by pilot experience and the Interim
30 Measurement and Evaluation report expected in August of this year. The advice
31 letter may include refinements to the formula used to prevent double
32 compensation.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 5
EXTENDED HFP PILOT IMPLEMENTATION

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 5
EXTENDED HFP PILOT IMPLEMENTATION

TABLE OF CONTENTS

A. Introduction.....	5-1
B. Overview of Key Program Implementation Activities and Funding Request.....	5-2
C. Price Creation.....	5-5
D. Billing and Customer Relationship Management Systems	5-7
1. Shadow Billing by External Vendor	5-7
2. Customer Relationship Management System	5-9
E. Customer Rate Tools.....	5-9
F. Customer Acquisition and Support	5-9
G. Program Administration	5-11
1. Program Management	5-11
2. Product Strategy and Delivery	5-11
a. Product Managers and Business Architects	5-11
b. Customer Operations Analysts	5-12
c. Project Managers	5-12
H. Compensation for ASP Engagement.....	5-12

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 5
EXTENDED HFP PILOT IMPLEMENTATION

A. Introduction

This chapter presents Pacific Gas and Electric Company's (PG&E) proposed implementation plan and associated costs for extending PG&E's Hourly Flex Pricing (HFP) pilots after the current HFP pilots expire at the end of 2027.¹ This includes implementation costs associated with extending the current "HFP 1.0" pilot through 2028, as well as making the proposed changes for a revised "HFP 2.0" pilot structure, starting by 2029, which are described in Chapter 2 (Overview of Proposal) and further detailed in Chapters 3 (Rate Design) and 4 (Dual Participation) of this testimony. The costs presented here also cover running the HFP 2.0 pilot through 2031 until Real-Time Pricing (RTP) rates can be billed in PG&E's billing systems, expected to be 2032 at the earliest. If the timing for implementation in PG&E's billing system extends later than 2031, PG&E may submit a request to extend the pilots further. Additionally, the costs presented in this chapter cover incorporating customers who are currently eligible for Phase 2 of PG&E's Vehicle-Grid Integration (VGI) pilot into the extended and revised HFP 2.0 pilot, as described in Chapter 2, Section E.6. Finally, costs associated with PG&E's request to facilitate continued engagement in HFP by Automation Service Providers (ASP) are presented in this chapter.

This implementation chapter does not present costs associated with Measurement and Evaluation (M&E), which are presented in Chapter 7. Costs for Marketing, Education, and Outreach (ME&O) support, such as creative development labor and website and FAQ maintenance, are presented in Chapter 6 of this testimony. However, this implementation chapter does address costs for some outreach, namely customer-facing communications activities, which are a part of the pilot implementation. Please note that a summary of all costs associated with the HFP Stop Gap Proposal is shown in Table 2-8 of Chapter 2 in this Testimony.

¹ Decision (D.) 24-01-032, p. 2.

1 The cost estimates presented here are based on PG&E's proposed
2 implementation approach to the Stop Gap HFP Extension presented throughout
3 this testimony. PG&E requests the opportunity to file a Tier 2 Advice Letter
4 within 45 days of the final decision to update cost estimates (including
5 implementation costs) based on the CPUC's final decision on this proposal.
6 This is an important mechanism to present potentially adjusted costs, as the final
7 rate and program design that PG&E is required to implement may require
8 substantively higher or lower costs to implement than the rate and program
9 design that is presented here in this testimony.

10 **B. Overview of Key Program Implementation Activities and Funding Request**

11 PG&E's funding request is a combination of funding to continue activities to
12 support the current HFP 1.0 pilot through 2028, implement the adjustments
13 PG&E is proposing in this testimony for an HFP 2.0 version of the pilot, and then
14 run the HFP 2.0 pilot through 2031. As is described in Chapter 2, Section D of
15 this testimony, due to the timing for when PG&E anticipates receiving a final
16 decision on this Stop Gap proposal (mid-2027), PG&E needs to extend the
17 current HFP pilots through 2028 while PG&E implements changes for HFP 2.0
18 before the HFP 2.0 version of the pilot is launched in 2028 or early 2029.
19 Although the ALJ Ruling targets approximately June 2027 for a decision, PG&E
20 requests the Commission issue its decision as expeditiously as possible so that
21 the HFP 2.0 revised pilot can be implemented as soon as possible.

22 As is outlined in Chapter 2 and throughout this testimony, PG&E is
23 proposing adjustments to the HFP pilot—based on our experience, M&E results,
24 and stakeholder feedback—that necessitate additional funding, along with
25 ongoing funding to continue running the pilots. PG&E believes these
26 adjustments are critical for meeting the pilot objectives of engaging customers
27 and ASPs, while developing learnings that can inform longer term strategy for
28 post-pilot RTP rate offerings. Additionally, there are elements of the current pilot
29 that PG&E is requesting to discontinue to reduce costs, namely the “transactive
30 pricing” platform as described in Chapter 3, Section E, which has seen limited
31 use. Removing this feature would save an estimated \$1.8 million in program
32 costs over the 2029-2031 time period, with the potential for additional savings of

1 \$1.2 million, by enabling consolidation of two shadow billing systems² used for
2 the current pilots into one system, for an estimated total savings of \$3 million
3 over the time period.

4 For the purpose of this testimony, PG&E has grouped implementation
5 activities into the following categories:

- 6 1) RTP Price Creation;
- 7 2) Billing and Customer Relationship Management;
- 8 3) Customer Rate Tools;
- 9 4) Customer Acquisition and Support;
- 10 5) Program Administration; and
- 11 6) Funding for ASP Participation.

12 The following sections of this chapter describe these implementation
13 activities and associated costs. The high-level costs associated with these
14 activities are presented in Table 5-1 below. The total estimated incremental cost
15 for implementation of the Stop Gap HFP Extension proposal is \$23,988,100.

² Currently, Yield Energy provides shadow billing for HFP Pilot 1 (for Agricultural Customers) while GridX provides shadow billing for the other RTP pilots.

TABLE 5-1
STOP GAP HFP EXTENSION PROPOSAL SUMMARY OF PROGRAM IMPLEMENTATION COSTS*

Line No.	Cost Area	Cost to Extend HFP Pilots through 2028 (a)	Estimated Remaining Funds from Current Budget by EOY 2028 (b)	Cost to Extend Adjusted HFP 2.0 Pilot from Jan 2029-Dec 2031 (c)	Total Incremental Cost from 2028-2031 (d=a+c)	Total Available Budget from 2028-2031 (e=a+b+c)
1	RTP Price Creation	\$405,000	\$0	\$945,000	\$1,350,000	\$1,350,000
2	Billing and Customer Relationship Management (CRM) Systems	1,549,500	0	4,857,500	6,407,000	6,407,000
3	Customer Rate Tools	100,000	0	300,000	400,000	400,000
4	Customer Acquisition and Support	598,000	0	894,000	1,492,000	1,492,000
5	Program Administration	2,861,600	0	10,477,500	13,339,100	13,339,100
6	Compensation for ASP Engagement	0	2,600,000	1,000,000	1,000,000	3,600,000
7	Total	\$5,514,100	\$2,600,000	\$18,474,000	\$23,988,100	\$26,588,100

Note: Total estimated costs including Implementation, M&E, and ME&O costs are presented in Table 2-8 in Chapter 2 of this testimony.

1 PG&E has sized the HFP 2.0 pilot budget to serve up to 16,000 enrolled
2 service agreements. If enrollment is projected to be exceeded during the period
3 covered by this Stop Gap HFP Extension, PG&E requests that the Commission
4 allow PG&E to request approval through a Tier 2 Advice Letter of additional
5 budget to support higher enrollment. PG&E estimates an additional variable
6 operating cost of approximately \$260,000 for every 2,000 additional customers
7 enrolled above 16,000 service agreements.

8 This additional funding may be necessary to ensure that customers enrolled
9 in the HFP pilot during the Stop Gap HFP Extension period are supported by
10 adequate staffing to perform key pilot activities. These activities include:
11 addressing customer inquiries regarding dual participation, enrollment, billing,
12 and other issues; processing new applications and verifying eligibility, which
13 requires reviewing customer data to confirm program eligibility; investigating and
14 solving data integration issues; and verifying the accuracy of billing. For billing
15 verification, support staff validate shadow bill outputs and ensure appropriate bill
16 adjustments (credits or charges) are made to customers' PG&E bills at True-Up,
17 when customers' HFP billing costs are reconciled with their billing costs on their
18 Otherwise Applicable Tariff (OAT). This reconciliation process is further
19 described in Chapter 2, Section C.2.d.

20 **C. Price Creation**

21 For the HFP pilot, PG&E uses an external vendor (GridX) to support the
22 development of day-ahead hourly price signals in accordance with PG&E's
23 approved pilot rate design, including both generation and distribution price
24 components. A "Price Server" system has been established with GridX to
25 compute and publish day-ahead (DA) and week-ahead RTP prices (DA plus
26 6 days forecast).

27 For the Marginal Energy Cost (MEC) generation component, the Price
28 Server obtains data from the California Independent System Operator (CAISO)
29 Day-Ahead Market (DAM) at the PG&E Default Load Aggregation Point (DLAP).
30 The MEC component is derived from the CAISO DAM cleared auction price at
31 the PG&E DLAP, which serves as the base wholesale energy price, and is
32 adjusted using a standard line loss factor based on a customer's voltage level
33 (secondary, primary, or transmission). For the week-ahead price forecast, the
34 Price Server leverages a week-ahead forecast parameter from the vendor,

1 Meteorologica, that is then leveraged by the server to produce the week-ahead
2 generation price component.

3 The Marginal Generation Capacity Cost (MGCC) component is calculated
4 using system-level inputs, including the CAISO system-wide DA demand
5 forecast and the wind and solar generation forecast, which together define the
6 net load of the CAISO system. In addition, temperature data from the Phoenix
7 and Seattle weather stations are incorporated as a proxy for regional energy
8 import and export conditions. A Flex Alert adder is applied during hours when a
9 CAISO Flex Alert is declared, increasing prices to reflect heightened system
10 capacity conditions. The MGCC formulation uses a sigmoidal function of
11 adjusted net load to produce a smooth, bounded capacity price signal that
12 increases rapidly as system conditions tighten, with an additional fixed adder
13 applied during Flex Alert hours to reflect exceptional system stress. The MEC
14 and MGCC components are combined to determine the total generation price.
15 The Price Server generates a separate generation price for each Load Serving
16 Entity (LSE), including PG&E and each participating Community Choice
17 Aggregator (CCA) in PG&E's service area.³

18 For the distribution price component, the Price Server incorporates a load
19 forecast, developed by PG&E, for each of the 59 representative circuit clusters
20 that are used to determine the DA distribution component pricing. The Price
21 Server uses the forecasted load for each representative circuit to calculate an
22 hourly distribution price based on the pricing formula developed by PG&E, which
23 is based on a sigmoidal function with an established price cap as circuit load
24 approaches historical maximums.

25 The HFP prices are developed on a DA basis and are published by
26 4:00 p.m. each day for the subsequent 24-hour period. PG&E disseminates
27 these prices through multiple channels, including a PG&E-hosted
28 customer-facing digital interface on PG&E.com, public and private application
29 programming interfaces (API), secure file transfer mechanisms for participating
30 CCAs, and the CEC's Market Informed Demand Automation Server (MIDAS).

³ At this time, CCAs are using PG&E's generation prices, but may want to use their own in the future.

PG&E also proposes to stand up an improved system to monitor price performance, relative to the intended rate design, to ensure HFP prices as well as customer credits and charges are reasonable.

D. Billing and Customer Relationship Management Systems

1. Shadow Billing by External Vendor

Under the current HFP pilot, participants continue to be billed in PG&E's primary billing systems on their Otherwise Applicable Tariff (OAT). Vendors operate shadow billing systems on behalf of PG&E for pilot participants. For HFP Pilot 1, Yield Energy (formerly Polaris Energy Services) provides shadow billing. For HFP Pilot 2 and Phase 2 of the VGI Pilot, GridX provides shadow billing. The systems take usage data from PG&E's data warehouse platform and apply the HFP hourly prices to that usage to calculate customer charges under the HFP rate. To do this, the shadow billing systems must assign an RTP generation price component that is consistent with the participating customers' LSE and a PG&E RTP distribution price component based on the representative circuit to which the customer's participating service agreement is assigned. In the current HFP rate design, the shadow billing systems must also account for the customer's subscription in calculating the HFP bill.

The shadow billing systems perform monthly comparisons between each customer's cumulative shadow bill under HFP and the customer's actual bill under the OAT, based on the specific usage subscription applicable to a given pilot participant. At the annual True-up (see Chapters 2 and 3), if the customer is eligible to receive credits because their cumulative net credits and charges on HFP are lower than their OAT charges, PG&E then must manually process the credits established to account for the appropriate taxes and franchise fees applicable to a given pilot participant, and then adjust the credit accordingly. The appropriate credit amount per customer is then provided through a process managed by PG&E's Billing Operations team as a bill adjustment. The credit (bill adjustment) is then presented on customers' PG&E Energy Statements.

PG&E is responsible for the distribution credit for both bundled and unbundled customers. For CCAs participating in the HFP, the CCA is

1 responsible for providing the RTP generation credit to its unbundled
2 customers, while PG&E is responsible for providing the generation credit to
3 bundled customers. The generation and distribution components for each
4 customer are manually processed because they must be booked into
5 different accounts.

6 As discussed in Chapter 2, Section E.1, PG&E is planning to change
7 from a “credit-only” to a “credit and charge” billing structure for HFP 2.0
8 which would mean that customers who have net HFP charges at their
9 True-Up would pay those additional charges. While this change will
10 represent a different structure from a customer experience perspective, from
11 an implementation perspective, the calculation and accounting processes to
12 accomplish this are already in place. For unbundled CCA and bundled
13 customers, the True Up process will separate the generation RTP True-up
14 from the distribution RTP True-up amounts, as is done in the current pilot.

15 PG&E proposes to discontinue the transactive platform from HFP
16 Pilot 1, which allows for consolidation of billing systems into a single shadow
17 billing system. Due to differences in rate design, PG&E currently operates
18 two shadow billing systems, one for agricultural customers that incorporates
19 the transactive platform and a separate system for residential and
20 non-residential customers that does not include the transactive platform.
21 The transactive platform performs billing-adjacent functions, including hourly
22 price display, transaction execution, subscription netting, and ex-post
23 reconciliation of transactions and subscription billing, before passing results
24 to the shadow billing process, effectively creating two billing systems
25 operating in sequence. Discontinuation of the Transactive Platform removes
26 the need for two shadow billing systems because there is no need for
27 billing-adjacent functions. Given observed customer behavior showing
28 limited use of transactive functionality, discussed in detail in Chapter 3,
29 Section E, this consolidation streamlines operations, reduces integration
30 complexity, and better aligns program systems and costs with demonstrated
31 pilot customer participation.

32 PG&E plans to continue to use the shadow billing platform for the Stop
33 Gap period, both to continue the current pilot structure through 2028 and for
34 the HFP 2.0 structure from 2029-2031. The proposed rate design changes

requested in this testimony would require reprogramming and testing of the shadow billing system. The removal of the subscriptions and the addition of the Revenue Neutral Adder will require an initial investment but will be less complex and costly to manage going forward, as discussed in Chapter 2, Section E.2.

2. Customer Relationship Management System

PG&E uses its CRM system for customer enrollment on the HFP pilot. At enrollment, this system checks eligibility and confirms application form input is consistent with PG&E records with regard to the customer's LSE eligible rate, dual enrollment, and customer information such as contact information. Following enrollment, the system also performs ongoing checks to ensure that participating customers remain eligible for HFP pilot participation. For HFP 2.0, this system would require updates to support the participation of Business Electric Vehicle (BEV) and other V2X customers, and any other changes to eligibility and/or dual participation rules.

E. Customer Rate Tools

Under the current HFP pilot, customers do not have access to PG&E online rate analysis or energy management tools to visualize HFP pricing and bill impacts. HFP is a performance-based overlay on top of existing rates designed specifically to incent targeted load response to variable and unpredictable hourly rates. HFP bills are settled annually, based on customer-specific load response, subscriptions and eligibility constraints. This structure fundamentally limits PG&E's ability to offer accurate rate comparisons for individual customers.

For HFP 2.0, PG&E is seeking to develop a proof of concept for visualizing usage, pricing and billing history for HFP customers. This will provide a self-service means for customers to understand the opportunities and risks of the HFP 2.0 rate design, and aid in billing comprehension to mitigate more costly calls to PG&E customer service representatives.

F. Customer Acquisition and Support

The HFP pricing structure is complex and customers require significant support during the customer acquisition and enrollment process, in addition to ongoing support. For large non-residential customers, PG&E's Business Energy Solutions (BES) representatives play a crucial role in helping customers

1 understand if HFP is an appropriate pricing solution and also help customers
2 understand the role of automation and ASPs. BES representatives serve as a
3 primary point of contact for ongoing questions related to large customers'
4 participation in the HFP pilot. For residential and small business customers, the
5 PG&E HFP Program team has been the primary point of contact to better
6 understand the questions and concerns of these customers. PG&E's contact
7 centers employ Customer Service Representatives (CSR) to manage customer
8 inquiries on various topics. CSRs have provided limited support for PG&E's
9 RTP pilots. With the increased enrollment potential of HFP 2.0, PG&E's CSRs
10 will need to serve as a first line of contact for customers. PG&E requires funding
11 to train BES representatives and CSRs about the HFP pilot and to cover the
12 costs of their time spent supporting customers on HFP.

13 Given the complexity of the HFP pricing structure and billing experience, not
14 all questions can be answered by BES representatives and CSRs. Some
15 customer support is also provided by operational staff dedicated exclusively to
16 supporting customers participating in HFP. These "Customer Operations &
17 Analytics" staff respond to detailed questions from customers regarding
18 eligibility, enrollment, billing, and the role of automation and ASPs in enabling
19 load response. These staff also support incentive processing for ASPs and
20 CCAs, coordinate with PG&E's billing operations staff, and respond to questions
21 from various parties. Customer Operations and Analytics staff have the ability to
22 understand rate calculations and pull customer data to assess and confirm
23 complex HFP billing-related questions from customers, ASPs, CCAs, and other
24 stakeholders.

25 For ongoing customer communications, PG&E will support customer
26 understanding of the pilot changes by providing clear and timely information to
27 participating customers utilizing routine customer communications. These
28 communications will support customer decision making regarding the pilot and
29 minimize confusion associated with pilot modifications. As the pilot approaches
30 completion, notifications are planned to inform participating customers that the
31 HFP 1.0 pilot is concluding. The email will describe approved pilot changes and
32 how changes may affect customers' bills and their desire to continue
33 participation. Customers will be informed that they need to affirmatively confirm
34 their intent to remain on the pilot (HFP 2.0) after reading the revised terms and

conditions. Customers who do not affirm their continued participation will be unenrolled from HFP 1.0. PG&E would like as many of the HFP 1.0 pilot participants to continue to participate in HFP 2.0. However, given that PG&E is proposing significant rate and program changes, PG&E would like customers to reaffirm their desire to participate in the pilot.

As Phase 2 of the VGI Pilots approaches conclusion, PG&E plans to notify participating customers that the VGI Pilots are ending and provide information on available options for continued participation. These communications will describe the planned pilot closure and outline how customers may continue participating in demand flexibility programs by applying to enroll in the ongoing HFP pilots. Activities associated with customer notifications and sunseting of the VGI Pilots will be supported within the authorized VGI Pilots budget.

G. Program Administration

PG&E employs staff to perform a number of functions required to support the HFP pilot, including program management, product strategy and delivery, analytical support and project management. This section describes the activities conducted by PG&E staff across these functions to support the pilots.

1. Program Management

Program managers coordinate the multiple PG&E lines of business, vendors, CCAs, and external vendor partners to ensure smooth program operation of the HFP rate offering. Coordination of the HFP pilot requires regular communication and alignment with key internal PG&E functions, including Billing Information Technology and Operations, Accounting, Marketing and Brand Management, Business Energy Solutions, Customer Operations and Support, Demand Response Operations, as well as external stakeholders including vendors, ASPs, and CCAs.

2. Product Strategy and Delivery

a. Product Managers and Business Architects

Product Managers and Business Architects are responsible for overall business strategy across the different PG&E and vendor products and platforms that are required to support the HFP pilot. This staff ensure that the various enterprise applications that support HFP, including the Price Server, shadow billing systems, PG&E's billing

1 systems, CRM system, PGE.com, ShareMyData, and APIs are
2 integrated to ensure connectivity and effective integration in support of
3 the current and future HFP 2.0 pilot. They also interpret regulatory
4 directives and translate those into requirements for external vendor
5 teams to implement the HFP pricing structure appropriately. They then
6 perform user acceptance testing to ensure that design specifications are
7 met and monitor performance of the HFP systems and processes.

8 **b. Customer Operations Analysts**

9 Customer Operations Analysts support the end-to-end customer
10 experience for the HFP Program, serving as key operational resources
11 for eligibility, enrollment, billing, and ongoing customer support. The
12 role focuses on resolving complex customer inquiries and enabling a
13 seamless customer experience on the pilot.

14 **c. Project Managers**

15 Project managers are tasked with ensuring that specific elements of
16 the HFP pilot implementation are completed on time and on budget and
17 that ongoing activities are on track. They develop project plans,
18 regularly assess progress, and develop mitigation strategies with staff
19 and leadership if a specific element of the overall HFP pilot is off track.
20 Within this function, staff must also manage contracts with vendors that
21 support HFP to ensure that the vendors deliver high quality products or
22 services that align with business needs, contractual obligations, cost
23 expectations, and performance standards. This staff ensure that
24 contract terms are met and perform internal forecasting and reporting of
25 progress and expenditure.

26 **H. Compensation for ASP Engagement**

27 As is described in more detail in Chapter 2, Section E.4, PG&E plans to
28 adjust the compensation approach to enable ASP participation in the pilot to a
29 more direct contractual model under which payments would be based on the
30 ASP achieving defined milestones for customer enrollment and demonstrated
31 load response. At the end of HFP 1.0, assuming it ends at the end of 2028,
32 PG&E estimates having an unused balance of approximately \$2.6 million from

1 the original ASP pilot budget for Pilot 2 (which was \$3.6 million)⁴ and requests to
2 make those funds available for HFP 2.0 from 2029-2031. In addition, PG&E
3 requests \$1 million in incremental funding to support a total ASP budget of
4 \$3.6 million for the 2029-2031 time period. PG&E would target five to
5 six contracted ASPs to support load response across key end-uses and
6 customer sectors, including residential, agricultural, commercial, industrial, and
7 BEV customers.

8 ASPs should be able to operate under business models that allow them to
9 leverage RTP to achieve customer bill savings without ongoing ratepayer
10 incentives. Therefore, PG&E will structure ASP agreements such that funding is
11 higher at the start of their participation in the HFP 2.0 pilot and is then reduced in
12 subsequent years of participation. Actual payments to ASPs in a given year will
13 be based on timing of ASP onboarding, the ASPs' achievement of performance
14 milestones, and other factors; however, the compensation will be structured
15 such that ASPs will receive reduced compensation in later years of pilot
16 participation.

⁴ D.24-01-032, p. A-2, Table A-2.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 6
MARKETING, EDUCATION, AND OUTREACH

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 6
MARKETING, EDUCATION, AND OUTREACH

TABLE OF CONTENTS

A. Marketing Objective.....	6-1
B. Marketing Strategy	6-1
1. Ongoing Customer Communications: Education and Pilot Awareness.....	6-1
C. Marketing Support	6-2
1. Pilot Material Maintenance and New Material Development.....	6-2
2. Partner and Vendor Material Review	6-2
D. Cost Estimates	6-2

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 6
MARKETING, EDUCATION, AND OUTREACH

A. Marketing Objective

The marketing objective for the Stop Gap Hourly Flex Pricing (HFP) Extension Proposal period is to support pilot continuity while maintaining customer engagement and understanding.

B. Marketing Strategy

1. Ongoing Customer Communications: Education and Pilot Awareness

This chapter describes Pacific Gas and Electric Company's (PG&E) overall marketing strategy and support during the Stop Gap HFP Extension period for HFP pilot 2.0.

PG&E's marketing communications strategy prioritizes pilot continuity by maintaining clear, consistent, and timely customer education through established channels customers routinely receive. The creative message development will focus on messaging for pilot participants, the HFP webpages, and FAQ's that clearly: (1) explain California Public Utilities Commission (Commission)-approved changes and customer actions, as applicable; (2) reinforce customer understanding of the HFP rate design to encourage informed decision-making; and (3) minimize confusion associated with pilot modifications. As HFP 1.0 concludes, it is critical that participating customers receive clear advance notice of the pilot transition and are informed of any Commission approved changes that may impact their bills and participation experience under HFP 2.0. As described in Chapter 5 (Implementation), Section F, and consistent with the goal to minimize expenditures, PG&E will utilize the ongoing pilot communications to deploy the information on the pilot changes that customers need to review and accept their transition to the HFP Pilot 2.0.

Annual support emails will promote engagement among enrolled participants, reinforce understanding of the HFP rate design, and encourage informed usage decisions consistent with pilot objectives. These communications will provide customers with information to help them interpret their pilot experience over time.

C. Marketing Support

1. Pilot Material Maintenance and New Material Development

Pilot material maintenance is focused on maintaining consistency and accuracy across existing materials and does not include development of content beyond what is necessary to support approved pilot operations. PG&E plans to maintain and update core HFP 1.0 pilot materials to HFP 2.0 to ensure customer-facing information remains accurate, current, and aligned with approved pilot parameters. This includes updates to existing materials such as the pilot webpage, fact sheets, FAQs, and enrollment applications as approved pilot changes are implemented.

Where new material development is necessary to support pilot changes, such efforts are intended solely to support customer communications associated with approved pilot activities. This includes materials developed to support notifications of approved pilot changes and annual support emails to promote engagement among enrolled participants. All material development is scoped to these defined communication needs, with versions to support residential, commercial, business electric vehicle, and agricultural customers, and is intended to minimize customer confusion while avoiding unnecessary incremental pilot expense.

2. Partner and Vendor Material Review

PG&E will continue to review materials developed by Automation Service Providers to ensure alignment with approved pilot parameters and consistency with PG&E customer communications and brand guidelines. This review function is intended to mitigate customer confusion and compliance risk associated with third-party materials.

D. Cost Estimates

The cost estimates shown below reflect anticipated Marketing, Education, and Outreach expenditures for the support activities described above, including customer segment specific communications for residential, commercial, business electric vehicle, and agricultural customers. These expenses are necessary to maintain pilot continuity and customer understanding during the Stop Gap HFP extension period for HFP 2.0.

The proposed budget is structured to prioritize cost discipline with expenditures incurred only as necessary to support customers participating in the pilot. Key cost drivers include required updates to customer-facing collateral, such as fact sheets and core pilot webpages for each customer segment.

By limiting activities to required communications and maintenance functions, and consolidating creative development where feasible, the budget avoids nonessential and scope-expanding expenditures and ensures resources are directed to support approved pilot operations and objectives.

This budget does not include the costs associated with the deployment of the communications to notify customers of the changes to the pilot as it transitions from HFP 1.0 to HFP 2.0 since those deployment expenses are a part of the ongoing pilot communications as described in Chapter 5 (Implementation), Section F.

TABLE 6-1
HFP STOP GAP PROPOSAL MARKETING, EDUCATION, AND OUTREACH COST ESTIMATES

Line No.	Expense Category	2028	2029	2030	2031	Total
1	Annual Pilot Customer Support E-Mails	–	–	\$15,000	\$15,000	\$30,000
2	Creative Development	–	\$20,000	20,000	–	40,000
3	Fact Sheets Refresh	\$20,000	–	–	–	20,000
4	Marketing Labor	30,000	25,000	15,000	15,000	85,000
5	Total	\$50,000	\$45,000	\$50,000	\$30,000	\$175,000

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 7
MEASUREMENT AND EVALUATION

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 7
MEASUREMENT AND EVALUATION

TABLE OF CONTENTS

A. Procedural History	7-1
1. A Structured and Scalable M&E Framework for VGI and EV Pilots Has Been Developed by the Commission.....	7-1
2. Expanded M&E Requirements for Residential, Commercial, and Agricultural Dynamic-Rate Pilots Embed Rigorous, Equity-Focused Evaluation as a Core Regulatory Expectation.....	7-3
3. PG&E and Energy Division Agreement on a Unified Evaluation Plan for VGI and HFP Pilots.....	7-5
B. Proposal	7-5
1. Continued M&E Remains Necessary for Dynamic Pricing Pilots	7-5
2. A Mid-Term and Final Evaluation Will Be Required to Continue a CPUC-Directed Rigorous, Transparent, and Stakeholder-Informed M&E Process	7-8
3. A Standalone RTP Impact Assessment Is Required to Develop a Post-Pilot RTP Rate Offering	7-9
4. Ongoing Operational Analytics and Strategy Support Is Necessary to Continuously Improve the Pilots.....	7-11
C. Conclusion.....	7-12

PACIFIC GAS AND ELECTRIC COMPANY

CHAPTER 7

MEASUREMENT AND EVALUATION

A. Procedural History

The measurement and evaluation (M&E) framework for Pacific Gas and Electric Company's (PG&E) Hourly Flex Pricing (HFP) and Vehicle-Grid Integration (VGI) pilots has been shaped by a series of deliberate regulatory actions by the California Public Utilities Commission (CPUC or Commission), each building on the last to create a robust, transparent, and actionable approach to program assessment.

1. A Structured and Scalable M&E Framework for VGI and EV Pilots Has Been Developed by the Commission

M&E requirements for VGI and electric vehicle (EV) customer pilots were established in Decision (D.) 20-12-029, which implemented Senate Bill 676 and set forth the expectation that all VGI pilots must include comprehensive, quantifiable evaluation plans. This decision required that each pilot proposal contain an evaluation plan detailing the process for determining pilot success and assessing the feasibility of scaling the pilot to a full program or using the results to revise existing programs. The decision also mandated that utilities develop strategies and metrics to maximize the use of cost-effective EV integration, with explicit requirements to report on pilot outcomes, barriers encountered, and lessons learned. This marked a significant shift from minimal or ad hoc reporting to a more structured, data-driven evaluation process.¹

Resolution (Res.) E-5192 operationalized these directives by approving PG&E's VGI pilots, specifying detailed M&E requirements. Under this resolution, PG&E was required to report on customer enrollment and attrition rates, incremental deployment costs, and the influence of pilot incentives on customer decisions. The resolution also called for

¹ D.20-12-029, p. 19; pp. 52-60; p. 68; and pp. 78-80, Ordering Paragraphs 1-2, 8, 18, and 23, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M355/K794/355794454.PDF> (accessed May 18, 2026).

quantification of the value of bidirectional technology to both customers and the grid, including total cost of ownership and bill savings. Importantly, it required both interim and final evaluation reports, with interim results due within three months of the completion of each pilot phase.² The resolution further mandated that PG&E update the VGI reporting template to include both its own proposed metrics and additional metrics specified by the Commission, such as adoption of communication standards, participation by Environmental and Social Justice (ESJ) communities, and round-trip efficiency data. To ensure regulatory oversight and alignment with statewide policy objectives, PG&E was also required to obtain Energy Division staff concurrence on the final evaluation report scope and deadline. The resolution emphasized that PG&E's evaluation plan must be sufficiently detailed to support future program scaling and that all reporting be transparent and accessible to stakeholders.³

Prior to the VGI pilots, PG&E had also submitted the Commercial Electric Vehicle Day-Ahead Real-Time Pricing (CEV DAH RTP) pilot's M&E plan, as detailed in Advice Letter (AL) 6587-E-B. The plan established clear research objectives and metrics for evaluating load impacts, system and greenhouse gas (GHG) benefits, customer bill impacts, infrastructure and automation costs, and customer experience for commercial EV customers. It also set forth a multi-year evaluation schedule, including annual and final reports, and required coordination with CPUC staff and independent third-party evaluators to ensure objectivity and rigor. The CEV DAH RTP M&E plan incorporated feedback from public workshops and stakeholders and was designed to inform both ongoing pilot improvements and the potential for broader program adoption.⁴ Neither of these reports were

² Midterm and final evaluation reports of the VGI and HFP Pilots are to be submitted on or before August 1, 2026 and March 1, 2028, respectively.

³ Res.E-5192, pp. 3, 28-32, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M474/K369/474369017.PDF> (accessed May 18, 2026).

⁴ Advice Letter (AL) 6587-E-B, available at: https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC_6587-E-B.pdf (accessed May 18, 2026).

delivered as these pilots were not initiated and are subject to pending
Petitions for Modification.⁵

2. Expanded M&E Requirements for Residential, Commercial, and Agricultural Dynamic-Rate Pilots Embed Rigorous, Equity-Focused Evaluation as a Core Regulatory Expectation

For residential and commercial customers, M&E requirements were outlined with D.22-08-002, which authorized PG&E to implement opt-in Real-Time Pricing (RTP) pilots for these customer classes. This decision required an interim evaluation report approximately 18 months after pilot launch, based on the first 12 months of operations, to inform whether the pilots should be extended or modified, as well as a final evaluation report after 24 months to assess the full pilot period. Both reports were to address load impacts, customer bill effects, GHG benefits, and customer experience, using rigorous statistical methods and control groups where feasible.⁶ The decision also required PG&E to conduct a public M&E workshop to solicit feedback on evaluation objectives and metrics, and to file an advice letter describing the proposed evaluation plan and incorporating stakeholder input. AL 6850-E, submitted in response, further detailed the M&E framework, including research objectives, data collection strategies, and a commitment to third-party evaluation for objectivity.⁷ Neither of these reports were delivered as these pilots were not initiated and are subject to pending Petitions for Modification.

Later, D.24-01-032 expanded Valley Clean Energy's (VCE) Agricultural Flexible Irrigation Tariff (AgFIT) to cover all of PG&E's service area and be made available to bundled and unbundled agricultural customers (Pilot 1). In addition, it authorized that Pilot 2 would be made available to residential

⁵ A.19-11-019, PG&E Petition for Modification of D.22-08-002 and Approval of Amended Settlement (Feb. 4, 2025) and A.20-10-011, Petition For Modification of D.21-11-017 (Feb. 5, 2025).

⁶ D.22-08-002, p. 10, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M496/K429/496429610.PDF> (accessed May 18, 2026).

⁷ AL 6850-E, available at: https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC_6850-E.pdf (accessed May 18, 2026).

and commercial customers.⁸ D.24-01-032 mandated that all expanded pilots include rigorous, independent evaluation, with both mid-term and final reports. It required that evaluation plans be developed in coordination with CPUC Energy Division lead staff. The decision specified that the evaluation must address not only aggregate load impacts and system benefits, but also participation and benefits for ESJ and Disadvantaged Community (DAC) customers. It directed that M&E reports explicitly assess the impact of pilots on recovered costs, and required that all findings be reported in a manner that considers regulatory decision-making and future program design.⁹

D.24-10-030 further embedded M&E as a core regulatory requirement by directing PG&E to report on the impacts of dynamic and demand flexibility rates on the need for capacity upgrades. This decision reinforced the expectation that M&E must be forward-looking and actionable, providing the Commission with the data needed to assess the effectiveness of pilots in achieving policy goals.¹⁰ D.25-08-049 added broader Commission guidance on demand-flexibility rate proposals, including sections on customer-protection evaluation and Equity and Access, which are relevant to future dynamic-rate proposal design and analysis. This included disaggregating results by customer segment, tracking participation and benefits for priority populations, and ensuring that evaluation findings inform future efforts to close equity gaps.¹¹

⁸ Pilots 1 and 2 are available to Community Choice Aggregation (CCA) customers if their CCA elects to participate.

⁹ D.24-01-032, pp. 50-52; pp. 65-67; p. 82, Conclusion of Law 37; and Attachment C, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M524/K176/524176497.PDF> (accessed May 18, 2026).

¹⁰ D.24-10-030, p. 119, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M544/K154/544154869.PDF> (accessed May 18, 2026).

¹¹ D.25-08-049, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M578/K182/578182496.PDF> (accessed May 18, 2026).

3. PG&E and Energy Division Agreement on a Unified Evaluation Plan for VGI and HFP Pilots

As of this writing, Energy Division lead staff and PG&E have agreed to unify the evaluation approach for the VGI and HFP Pilots. A unified evaluation plan was agreed upon which combines research objectives for both the VGI and HFP pilots, and delivers separate reports for each. This plan establishes a coordinated approach based on relevant past procedural history, with midterm evaluation reports to be submitted on or before August 1, 2026 and final evaluation reports to be submitted on or before March 1, 2028. The joint evaluation framework ensures that findings will be comprehensive, comparable, and actionable across both pilot domains, and reflects the alignment between the utility and the Commission's staff. Because the price signal and billing structure is the same for both Phase 2 of the VGI Pilots and HFP Pilots, PG&E stresses the importance of the continued unification of these research efforts.

B. Proposal

PG&E agrees with and supports the Commission's long-standing direction that pilots for RTP and VGI be subject to comprehensive, independent, and transparent M&E. The Commission has consistently emphasized that rigorous M&E is essential to assess pilot performance, identify implementation challenges, and inform future rate and program design. PG&E's proposal builds directly on this guidance and reflects the evaluation frameworks authorized for both the HFP Pilots and VGI pilots, including the midterm and final evaluations required under those authorizations. In addition to comprehensive M&E, PG&E proposes to contract a third-party expert to conduct a standalone RTP impact assessment that will support forward-looking policy and rate design decisions. Finally, PG&E requests additional funding to support strategy and to develop program metrics which improve program operations.

1. Continued M&E Remains Necessary for Dynamic Pricing Pilots

Recent dynamic pricing evaluations provide important context for why continued M&E remains necessary. The final evaluation of the VCE AgFIT pilot found that while customers demonstrated willingness to respond to dynamic prices, observed load response was constrained by operational

realities, rate design changes during the pilot, data limitations, and the need for longer periods of stable implementation.¹² Similarly, Southern California Edison's Dynamic Rate Pilot evaluation documented modest and heterogeneous customer response, with bill impacts often driven by structural load characteristics and pilot design features such as shadow billing rather than sustained behavioral response.¹³ Additional insight is provided by San Diego Gas and Electric's Vehicle Grid Integration evaluation, which demonstrated measurable price responsiveness for certain EV charging configurations while also explicitly documenting methodological limitations common to early-stage pilots, including lack of control groups, self-selection bias, and challenges in isolating causal impacts when prices and events are not randomly assigned.¹⁴ These evaluations highlight that dynamic pricing and VGI outcomes depend heavily on customer segment, technology enablement, billing structure, and program maturity, reinforcing the Commission's rationale for requiring sustained, comprehensive M&E.

Another factor limiting M&E of customer response has been the magnitude and variability of price signals available to customers during early dynamic pricing pilot years. PG&E observed that, relative to 2022, the price levels and price variability has been low, especially during the year of 2025, which likely dampened customers' incentive to adjust their usage behavior in response to differences between low and high prices. The California Independent System Operator (CAISO) Locational Marginal Price for the PG&E Default Load Aggregation Point (DLAP) only represents a subcomponent of the HFP price signal. However, the DLAP is tied to

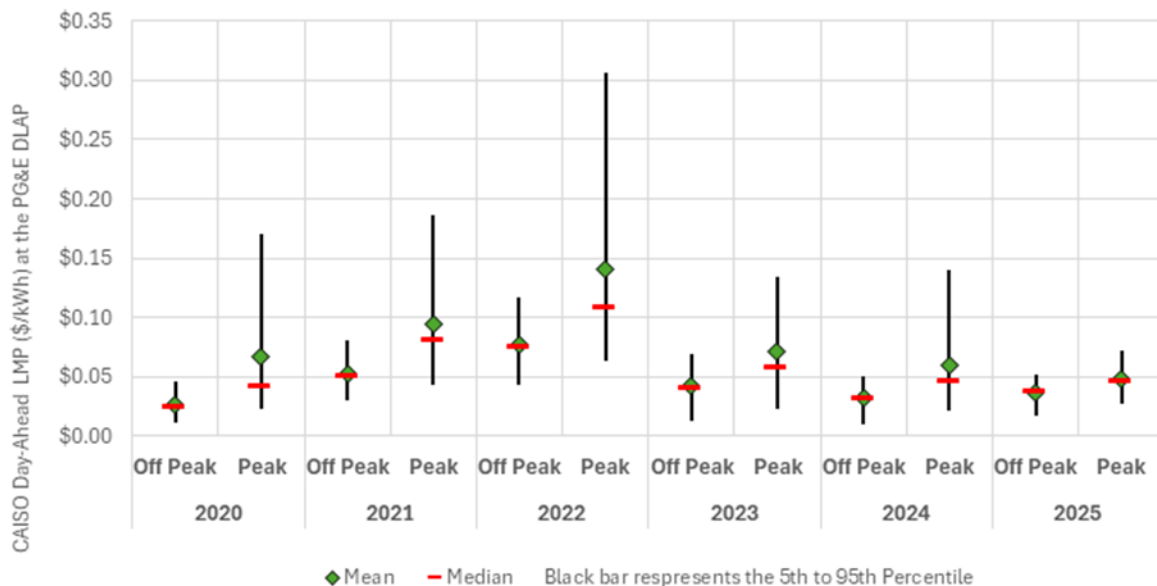
¹² Hansen and Clark, Christensen Associates, Final Evaluation of Valley Clean Energy's Agricultural Pumping Dynamic Rate Pilot (Apr. 17, 2025), pp. 2-3, available at: <https://www.dret-ca.com/wp-content/uploads/2025/04/VCE-AgFIT-Pilot-Final-Evaluation-Report.pdf> (accessed May 18, 2026).

¹³ Hansen, et al, Christensen Associates, Final Evaluation of Southern California Edison's Dynamic Rate Pilot (Feb. 28, 2025), pp. 7-9, available at: <https://www.dret-ca.com/wp-content/uploads/2025/03/PUBLIC-SCE-DRP-Final-Evaluation-Report.pdf> (accessed May 18, 2026).

¹⁴ Demand Side Analytics, Final Report, 2024 Load Impact Evaluation of San Diego Gas and Electric's Vehicle Grid Integration Rate (Apr. 1, 2025), p. 24, available at: https://www.calmac.org/publications/DSA_PY2024_Vehicle_Grid_Integration_Report_Public_FINAL.pdf (accessed May 18, 2026).

energy demand and underlying HFP price formation, which can illustrate broader price conditions tied to system demand. Figure 7-1 demonstrates the difference between DLAP prices during peak hours (4-9 p.m.) and off-peak hours from 2020 through 2025. In addition, this figure shows price dispersion within both peak- and off-peak periods as the range between the 5th and 95th percentile. When observing these two dynamics, price arbitrage opportunity for bill savings through load response was low relative to 2022. Given that the RTP pilots began enrollment in the fourth quarter of 2024, customers subsequently faced the lowest and least variable prices in 2025.

FIGURE 7-1
CAISO PG&E DLAP PRICES IN PEAK (4-9 PM) AND
OFF PEAK (ALL OTHER HOURS) FROM 2020-2025



When price signals are low or exhibit limited variability, customers have fewer opportunities for price arbitrage that would incent them to adjust usage in response to hourly price differences. This lack of opportunities constrains the ability of M&E efforts to observe and quantify price-responsive behavior. These findings do not suggest that comprehensive M&E is unwarranted; rather, they underscore the importance of continued evaluation over a longer horizon and under-evolving pilot

conditions to better understand customer response, program maturity, and scalability.

2. A Mid-Term and Final Evaluation Will Be Required to Continue a CPUC-Directed Rigorous, Transparent, and Stakeholder-Informed M&E Process

Consistent with this regulatory history and M&E scope, PG&E proposes to continue comprehensive M&E in a manner aligned with the HFP pilots and VGI pilots framework. Specifically, PG&E proposes to contract a third-party expert to conduct two evaluations, with reports submitted August 1, 2030 and March 1, 2032. These evaluations would be consistent in structure and scope with the August 2026 midterm and March 2028 final VGI and HFP Pilot evaluation reports, which combine research objectives for both the VGI and HFP pilots as well as those authorized from PG&E's previously authorized RTP pilots, and reflect the alignment between the utility and the Commission's staff.

Under this proposal, the HFP 2.0 evaluation reports are to be submitted on or before August 1, 2030 and March 1, 2032. The evaluation dates are driven by when meaningful data becomes available throughout the stop-gap period. Since customers transition from HFP 1.0 to HFP 2.0 in 2029, at least one year of HFP 2.0 experience is estimated to be available for the August 2030 evaluation. These evaluations will assess a substantially different rate and program design than the evaluations for the HFP 1.0 and VGI Pilots midterm and final evaluation due to the proposed changes in pilot rate and program structure. PG&E will coordinate closely with CPUC Energy Division lead staff in the development of the evaluation plans for these evaluations.

The evaluation plan for the two reports will assess the following key elements:

- The history of pilot enrollments across a variety of participant types;
- The response of customer loads to prices (i.e., efficacy of the dynamic pilot rate to shift customer load out of high-price hours);
- The monthly bill impacts of the pilot dynamic rate in comparison to a customer's otherwise applicable tariff;

- The system benefits and the recovery of costs for customers on the pilot tariff, including the impact of any under- or over-collection of revenues against the impact of the shifted participant loads on marginal costs, and on the avoided cost value;
- A summary of fixed and variable costs incurred;
- Customer experience and feedback; and
- And an assessment of pilot processes.

Where feasible, results will be disaggregated by customer class, technology adoption, and distribution level, as well as ESJ, DAC, California Alternate Rates for Energy (CARE), and Family Electric Rate Assistance (FERA) status.

PG&E proposes a budget of \$800,000 to contract a third-party expert to conduct the two comprehensive evaluations described above, inclusive of VGI participants. This budget is informed by the bids received in the request for proposals conducted for the August 2026 and March 2028 evaluations of the HFP pilots. PG&E finds this budget consistent with the scale and complexity of the pilots and aligns with recent CPUC authorizations for similar efforts.

These evaluation activities will be conducted by independent third-party evaluators. PG&E will continue to solicit input from stakeholders through a public webinar and comment period for each evaluation, to refine evaluation metrics and address emerging issues. Reports will be submitted to the CPUC, with interim findings provided to stakeholders as appropriate. This approach ensures that the extension of the HFP Pilots is supported by a rigorous, transparent, and stakeholder-informed M&E process, consistent with CPUC directives and best practices.¹⁵

3. A Standalone RTP Impact Assessment Is Required to Develop a Post-Pilot RTP Rate Offering

In addition to comprehensive M&E, PG&E proposes to contract a third-party expert to conduct a standalone RTP impact assessment, with a

¹⁵ As part of the D.24-01-032 rulemaking process, PG&E requested an amount of \$600,000 for the August 2026 and March 2028 evaluations of the HFP pilots to be included as part of the PG&E Ag Pilot and PG&E Expanded Pilot 2 Implementation Budgets.

1 report due May 1, 2028, to support forward-looking policy and rate design
2 decisions. This study will assess impacts of real-time pricing under various
3 adoption and load elasticity scenarios, including the characterization of
4 potential future load shifting and electric system impacts over longer
5 planning horizons. The study will also examine how different price variability
6 scenarios affect potential outcomes. The purpose is to equip the CPUC and
7 PG&E with the analytical foundation necessary to better understand
8 potential costs and benefits of post-pilot RTP deployment. A
9 forward-looking, scenario-based analysis is complementary to the ex-post
10 mid-term and final pilot evaluations.

11 The California Energy Commission's Load Management Standards
12 guide investor-owned utilities to offer an optional dynamic rate to all eligible
13 customers upon approval by the CPUC. PG&E plans to propose a post-pilot
14 RTP rate offering for CPUC review. To support that proceeding with a
15 rigorous, credible, and data-driven record, the foundational market research
16 would be completed by mid-2028.

17 Without an impact assessment, the rate proceeding would lack: (a) a
18 quantitative characterization of the scaled HFP customer base and their
19 responsiveness; (b) a forward-looking enrollment and load-shift forecast;
20 and (c) a cost-effectiveness demonstration necessary to justify ratepayer
21 cost recovery of a scalable post-pilot RTP rate offering.

22 The CPUC has a well-established precedent of authorizing impact
23 assessments to inform policy transitions from pilots to more broadly scaled
24 rate offerings and programs. CPUC has authorized market and potential
25 studies in the load management solutions space, including multi-phase
26 demand response potential assessments, Net Energy Metering (NEM) 2.0
27 lookback study, and the Self-Generation Incentive Program (SGIP) Energy
28 Storage Market Assessment reports, all of which required extensive
29 modeling, scenario development, and stakeholder engagement. These
30 studies have historically been funded in the range of \$650,000 to

\$2 million,^{16,17,18} depending on scope breadth, data intensity, and modeling complexity. PG&E's proposed RTP impact assessment, being lower to mid-range in terms of scale and complexity, is estimated at \$1 million, representing an investment consistent with precedent.

The study will benchmark to studies from other service areas and will pursue the following objectives based on PG&E's RTP pilots:

- Characterize potential RTP participation in PG&E's service territory, covering customer type, load profile, technology adoption, price responsiveness, and geographic distribution;
- Estimate ex-ante load response across customer segments and technologies, establishing likely elasticity parameters;
- Forecast the enrollment potential and aggregate load response capability under a scaled PG&E RTP rate;
- Assess cost-effectiveness of a post-pilot RTP rate offering using CPUC-approved cost-effectiveness frameworks; and
- Identify barriers to scale and recommend program design modifications to address them.

4. Ongoing Operational Analytics and Strategy Support Is Necessary to Continuously Improve the Pilots

Finally, PG&E proposes a budget of \$600,000 to support ongoing tracking of program metrics to inform operational strategy. This funding supports recurring analytics and strategic engagement distinct from formal, periodic evaluation activities, and is particularly important because HFP represents a novel and evolving dynamic pricing pilot rather than a mature,

¹⁶ PG&E awarded a contract of approximately \$650,000 for the 2019 SGIP Energy Storage Market Assessment report.

¹⁷ Contract 13IA5025 represents the awarded \$1 million contract for the CA DR Potential Study Phase 1 (2015) Rulemaking 13-09-011. CPUC FY17-18 Non-IT Contract Disclosures, available at: https://www.cpuc.ca.gov/-/media/cpuc-website/files/uploadedfiles/cpuc_public_website/content/transparency/landing_page_snippets/non-it-fy17-18.pdf (accessed May 18, 2026).

¹⁸ \$2 million was authorized for the NEM 2.0 lookback study. D.18-09-044, p. 45, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M230/K892/230892616.PDF> (accessed May 18, 2026).

scaled program. The pilots span new customer segments, rely on complex implementation and data streams, and intersect with related pilot activities and evaluation requirements, which means operational issues, enrollment dynamics, and performance patterns are still emerging as the pilot develops.

The scope includes routine data collection and validation across multiple data sources, development of monthly metrics and dashboard visualizations on enrollment trends, energy usage changes, bill savings, pricing performance, and GHG impacts. This work includes recurring strategy discussions and ad-hoc internal memos to interpret emerging trends, identify operational and rate design issues, assess drivers of customer bill outcomes, and develop actionable recommendations to improve pilot implementation and inform future regulatory reporting.

Ongoing operational analytics and strategy support will allow PG&E to identify issues early, monitor enrollment and operational performance, and make timely adjustments during implementation while keeping evaluation activities aligned with actual program conditions. The proposed budget reflects PG&E's current experience procuring similar operational metrics and strategy support for the HFP Pilots, recognizing added complexity associated with pilot changes and broader customer coverage.

C. Conclusion

In summary, PG&E requests that the Commission approve the M&E proposals presented in this chapter. Specifically, PG&E requests that the Commission approve the following:

- Two evaluations, conducted by a third-party evaluation consultant and with reports submitted August 1, 2030 and March 1, 2032. The evaluations will assess the following items:
 - a) The history of pilot enrollments across a variety of participant types;
 - b) The response of customer loads to prices (i.e., efficacy of the dynamic pilot rate to shift customer load out of high-price hours);
 - c) The monthly bill impacts of the pilot dynamic rate in comparison to a customer's otherwise applicable tariff;
 - d) The system benefits and the recovery of costs for customers on the pilot tariff, including the impact of any under- or over-collection of revenues against the impact of the shifted participant loads on marginal costs, and on the avoided cost value;

- e) A summary of fixed and variable costs incurred;
 - f) Customer experience and feedback;
 - g) Assessment of pilot processes; and
 - h) Where feasible, results will be disaggregated by customer class, technology adoption, and distribution level, as well as ESJ, DAC, CARE, and FERA status
- An RTP Impact Assessment, conducted by a third-party evaluation consultant and with a report to be submitted on or before May 1, 2028. The assessment will assess the following items:
 - a) The characterization of the potential RTP participation in PG&E's service territory;
 - b) The ex-ante load response of the pilots;
 - c) The forecasted potential of a fully-scaled PG&E RTP rate;
 - d) The cost-effectiveness of a post-pilot RTP rate offering; and
 - e) The barriers to scale and recommendations for program design modifications.
 - Ongoing operational strategy and program metrics to support pilot implementation.
 - Allow PG&E to rollover \$100,000 in anticipated remaining funding for M&E at the end of 2028 and approve \$2,300,000 for M&E for the Stop Gap HFP Extension from 2028-2031.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 8
COST RECOVERY

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 8
COST RECOVERY

TABLE OF CONTENTS

A. Introduction.....	8-1
B. Cost Recovery Proposal.....	8-1
1. Shadow Bill	8-1
a. Shadow Bill Savings (Credits)	8-1
b. Shadow Bill Charges	8-2
2. Pilot Costs	8-3
3. Updates to Preliminary Statements.....	8-3
C. Conclusion.....	8-3

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 8
COST RECOVERY

A. Introduction

The purpose of this chapter is to present Pacific Gas and Electric Company's (PG&E) cost recovery proposal for the Stop Gap Hourly Flex Pricing (HFP) Extension Proposal. Specifically, PG&E requests:

- 1) To true-up shadow bill credits and charges on an annual basis through its Annual Electric True-up (AET) process;
- 2) To recover the distribution component of the revenue shortfall related to the shadow bill credits from bundled and unbundled customers through its existing revenue adjustment mechanism balancing account;
- 3) To recover the generation component of the revenue shortfall related to the shadow bill credits from bundled customers through its existing revenue adjustment mechanism balancing account;
- 4) To record shadow bill charges through its existing revenue adjustment mechanism balancing accounts for distribution and generation components, respectively; and
- 5) To track and record any pilot costs in an existing memorandum account.

B. Cost Recovery Proposal

PG&E requests the California Public Utilities Commission (Commission) approve its cost recovery proposal as reasonable and necessary to implement the extension of the Stop Gap Proposal as further discussed in Chapter 2 of this testimony.

1. Shadow Bill

a. Shadow Bill Savings (Credits)

Conclusion of Law (COL) 31 of Decision (D.) 24-01-032 found it reasonable for PG&E to true-up shadow bill credits (savings on a customer's pilot bill relative to a customer's Otherwise Applicable Tariff bill) for its HFP Pilots (formerly the Expanded Pilots) on an annual basis through its AET process and recover (a) the revenue shortfall from the distribution component of PG&E's bundled and unbundled customers in

its Distribution Revenue Adjustment Mechanism (DRAM) balancing account),¹ a two-way balancing account, and (b) the revenue shortfall from the generation component of PG&E's bundled customers in its existing Energy Resource Recovery Account (ERRA),² a two-way balancing account. Ordering Paragraph 3 of Resolution E-5326 ordered PG&E to use the same cost recovery mechanisms as described in COL 31 of D.24-01-032 to true-up and recover shadow bill credits for PG&E's Vehicle-Grid Integration (VGI) Pilots.

PG&E proposes to continue to use these same cost recovery mechanisms for shadow billing for the Stop Gap HFP Extension Proposal. Specifically, PG&E proposes to true-up shadow bill credits for the Stop Gap Proposal on an annual basis through its AET process and recover (a) the revenue shortfall from the distribution component of PG&E's bundled and unbundled customers in its existing DRAM balancing account and (b) the revenue shortfall from the generation component of PG&E's bundled customers in its ERRA. Recovery through DRAM and ERRA is the process already in place for recovery of shadow bill savings for the distribution component and generation component, respectively, for the HFP Pilots and VGI Pilots. As such, it should be reasonable to continue to use these existing mechanisms to recover the revenue shortfall for extensions to these same pilots.

b. Shadow Bill Charges

If the shadow billing results in a customer charge, then PG&E proposes to record the incremental billed revenue using the existing accounting procedures in its existing two-way revenue adjustment mechanism balancing accounts, specifically DRAM for the distribution component and ERRA for the generation component. The use of these

¹ Electric Preliminary Statement Part CZ, available at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_PRELIM_CZ.pdf (accessed May 18, 2026) .

² Electric Preliminary Statement Part CP, available at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_PRELIM_CP.pdf (accessed May 18, 2026) .

accounts is consistent with PG&E's current practice for billing true-ups and adjustments.

2. Pilot Costs

COL 31 of D.24-01-032 found it reasonable for PG&E to track and record implementation costs for its HFP Pilots in its existing Dynamic and Real-Time Pricing Memorandum Account (DRTPMA)³ and recover costs through a General Rate Case (GRC) proceeding. As such, PG&E filed Advice Letter (AL) 7189-E⁴ to establish a new subaccount, the Expanded Pilots Subaccount, in the DRTPMA to record these costs.

For the Stop Gap Proposal, PG&E proposes to track and record all costs for the Stop Gap Proposal in the Expanded Pilots Subaccount of the DRTPMA. Refer to Chapter 2 of this Testimony for a description of the costs included in this proposal. PG&E would seek recovery of the costs recorded in the Expanded Pilots Subaccount of the DRTPMA through the GRC, subject to reasonableness review.

3. Updates to Preliminary Statements

Upon approval of a decision in this proceeding, PG&E intends to file a Tier 1 advice letter to update its preliminary statements as needed to comply with the decision.

C. Conclusion

In summary, PG&E requests that the Commission approve the cost recovery proposals presented in this chapter. Specifically, PG&E requests that the Commission approve the following:

- Shadow bill credits may be trued up on an annual basis through PG&E's AET process and the related revenue shortfall for the distribution component may be recovered from bundled and unbundled customers through its existing DRAM balancing account and the generation component may be recovered from bundled customers through its existing ERRa balancing account;

³ Electric Preliminary Statement JI, available at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_PRELIM_JI.pdf .

⁴ PG&E filed AL 7189-E on February 26, 2024 and received approval through a disposition letter on September 4, 2024 with an effective date of February 26, 2024.

- 1 • Shadow bill charges, i.e., the billed revenue, may be recorded in PG&E's
2 existing DRAM (distribution component) and ERRA (generation component)
3 balancing accounts; and
- 4 • All incremental costs may be tracked and recorded in PG&E's DRTPMA and
5 sought for recovery through the GRC, subject to a reasonableness review.

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX A
STATEMENT(S) OF QUALIFICATIONS

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF JAHON AMIREBRAHIMI

Q 1 Please state your name and business address.

A 1 My name is Jahon Amirebrahimi, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 My title is Expert Strategic Analyst, Customer Programs Measurement and Evaluation in Clean Energy Programs. I manage the evaluation of customer programs and pilots, including demand response, distributed energy resource, time-of-use rate, and real-time pricing initiatives.

Q 3 Please summarize your educational and professional background.

A 3 I received a Master of Science in Agriculture and Resource Economics from the University of California, Davis in 2020. During this time, I served as a part-time researcher for the Agricultural Issues Center. I also received a Master of Public Policy from the University of California, Berkeley in 2019. During this time, I served as a part-time researcher for Lawrence Berkeley National Laboratory Energy Markets and Planning group. Prior to earning my Masters, I worked for the California Department of Resources, Recycling and Recovery as well as the City of Kalgoorlie-Boulder, Australia. I also earned a Bachelor of Science in Environmental Sciences from the University of California, Berkeley in 2013. Over the past six years working for PG&E, I have served as Subject Matter Expert in the Demand Flexibility Order Instituting Rulemaking (R.) (R.22-07-005), where I supported the development of the expansion of system reliability pilots (Decision 24-01-032) as well as the Petitions for Modification related to PG&E's 2020 General Rate Case Phase II Real Time Pricing Pilots and the Commercial Electric Vehicle Day-Ahead Real Time Pricing Pilots.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's General Rate Case Phase II proceeding:

- Exhibit (PG&E-6), "PG&E's Testimony Supporting Stop-Gap Interim RTP Pilots Extension Proposal":
 - Chapter 7, "Measurement and Evaluation."

- 1 Q 5 Does this conclude your statement of qualifications?
- 2 A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF NEDA ASSADI

Q 1 Please state your name and business address.

A 1 My name Neda Assadi, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am a Principal Product Manager in PG&E's Load Management Solutions Department, where I am responsible for PG&E's load management strategy and policy.

Q 3 Please summarize your educational and professional background.

A 3 In 2008, I received a Bachelor of Arts degree in International Studies with concentrations in Political Science and Economics from the University of California – San Diego, La Jolla, California. In 2014, I received a Master of Arts degree in Energy, Resources, and the Environment and International Economics from Johns Hopkins University Paul H. Nitze School of Advanced International Studies, in Washington, D.C. I joined PG&E in 2015 in the Demand Response Department and held roles focused on policy development for PG&E's demand response programs and third-party demand response and load management strategy. I have been a witness on dual participation in demand response programs in multiple proceedings. Prior to joining PG&E, I worked in financial, economic, and strategic consulting, including supporting the World Bank on energy access policy in rural areas.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's General Rate Case Phase II proceeding:

- Exhibit (PG&E-6), "PG&E's Testimony Supporting Stop-Gap Interim RTP Pilots Extension Proposal":
 - Chapter 2, "Overview of PG&E's Stop Gap HFP Pilot Extension Proposal":
 - Section E.5; and
 - Chapter 4, "Dual Participation."

- 1 Q 5 Does this conclude your statement of qualifications?
- 2 A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF ANDREW AU

Q 1 Please state your name and business address.

A 1 My name Andrew Au, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am a Senior Manager in the Pricing Products Department. My responsibilities include the strategy, implementation, and operations of PG&E's customer Energy Management Tools, Rate tools, and Dynamic Rates.

Q 3 Please summarize your educational and professional background.

A 3 I received a Bachelor of Arts degree in Mechanical Engineering from University of the Pacific in 2007. I have worked in the Energy and Utility industries since then, starting with Energy Efficiency research under the United States Department of Energy's Building America program for 4 years. I have worked at PG&E for the past 15 years in various roles in Demand Response, Energy Efficiency, Grid Modernization, Data Systems, and Pricing Products. My responsibilities have included program/product management, tariff and product implementation, business architecture, regulatory policy and strategic program design.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's General Rate Case Phase II proceeding:

- Exhibit (PG&E-6), "PG&E's Testimony Supporting Stop-Gap Interim RTP Pilots Extension Proposal":
 - Chapter 2 "Overview of PG&E'S Stop Gap HFP Pilot Extension Proposal":
 - Sections A through D, E.1, E.4, E.7 through E.9, F and G; and
 - Chapter 5, "Extended HFP Pilot Implementation."

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF JAMIE CHESLER

Q 1 Please state your name and business address.

A 1 My name Jamie Chesler, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am the Senior Director of Solutions Marketing and Customer Communications responsible for marketing PG&E's customer-facing programs for the business and residential classes. Programs under my purview include: (1) Energy Efficiency, (2) Clean Energy Transportation, Building Electrification, (3) Distributed Generation, (4) Demand Response, (5) Resiliency, (6) and Rates. I also oversee Marketing Operations including analytics, regulatory marketing strategy, channel marketing (e-mail and direct mail) and marketing financial operations. Additionally, my team manages PG&E bill package and direct to customer communications focused on safety, outages and field outreach.

Q 3 Please summarize your educational and professional background.

A 3 I graduated from Wesleyan University with a Bachelor of Arts degree in English in 1996. I earned a Master's degree in Business Administration from DePaul University's Kellstadt School of Business in 2005. I have a proven track record with over 20 years of experience leading marketing strategy and driving increased demand for both large and small organizations. Early in my career, I was fortunate to lead corporate marketing and communications for a small manufacturing and services company. I joined PG&E in year 2010. I have worked at PG&E for the last 15 plus years, which has further developed my ability to manage larger more complex marketing campaigns and larger teams. My responsibilities at PG&E include managing and coaching a diverse group of employees focused on customer-centric marketing strategy to drive growth through increased awareness and participation in customer-facing programs in both the Business-to-Business and Business-to Customer spaces.

1 Q 4 What is the purpose of your testimony?

2 A 4 I am sponsoring the following testimony in PG&E's General Rate Case
3 Phase II proceeding:

4 • Exhibit (PG&E-6), "PG&E's Testimony Supporting Stop-Gap Interim
5 RTP Pilots Extension Proposal":

6 – Chapter 6, "Marketing, Education and Outreach."

7 Q 5 Does this conclude your statement of qualifications?

8 A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF AMITAVA DHAR

Q 1 Please state your name and business address.

A 1 My name is Amitava Dhar, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 My title is Senior Manager, Cost of Service in Regulatory Affairs. I lead a team of 15 Data Scientists and we are responsible for Cost of Service analysis and Regulatory Analytics for electric and gas rates-related regulatory filings.

Q 3 Please summarize your educational and professional background.

A 3 I received a Ph.D. degree in Mechanical Engineering, specializing in development of Fourier series and Artificial Neural Network approaches to model hourly energy use in commercial buildings, from Texas A&M University and am a Chartered Financial Analyst Charterholder. After I completed my Ph.D. in 1995, I worked in the banking and energy industries. Companies/Institutions I worked for include Los Alamos National Laboratory, CASA Inc., Household Credit Services, Enron Corporation, Williams Energy Marketing and Trading, Shell Oil Company, and currently PG&E, since September of 2008. I originally joined PG&E's Market Risk Management team, and transitioned to PG&E's Rates department in mid-2012. Over the last 12 years working for PG&E, I have worked and served as a Subject Matter Expert in several electric and gas cost of service-related California Public Utilities Commission filings, including the 2017 and 2020 General Rate Case Phase II proceedings, the 2015 Rate Design Window proceeding, and the 2018 Gas Cost Allocation proceeding.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's 2023 General Rate Case Phase II proceeding:

- Exhibit (PG&E-2), "Cost of Service Studies":
 - Chapter 1, "Introduction to Cost of Service Analysis Proposals";
 - Chapter 1, Attachment A, "Marginal Cost Table";
 - Chapter 5, "Marginal Transmission Capacity Costs";

- 1 • Exhibit (PG&E-6), “PG&E's Testimony Supporting Stop-Gap Interim
- 2 RTP Pilots Extension Proposal”:
- 3 – Chapter 2, “Overview of PG&E’s Stop Gap HFP Pilot Extension
- 4 Proposal”;
- 5 • Section E.3; and
- 6 – Chapter 3, “Stop Gap Rate Design”:
- 7 • Section G.

8 Q 5 Does this conclude your statement of qualifications?

9 A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF REBECCA MADSEN

Q 1 Please state your name and business address.

A 1 My name is Rebecca Madsen, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am an Expert Regulatory Analysis and Forecasting Analyst in PG&E's Energy Accounting Department, within the Controller's organization. I am responsible for advising on emerging regulatory issues and implementing cost recovery requirements in California Public Utilities Commission decisions.

Q 3 Please summarize your educational and professional background.

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

I have had the opportunity and privilege to serve our customers across the service territory since 2015 in Energy Accounting.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's 2023 General Rate Case Phase II proceeding:

- Exhibit (PG&E-6), "PG&E's Testimony Supporting Stop-Gap Interim RTP Pilots Extension Proposal":

- Chapter 8, "Cost Recovery."

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF MELANIE JEAN
MCCUTCHAN

Q 1 Please state your name and business address.

A 1 My name is Melanie Jean McCutchan, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am a Principal, Product Management within the Pricing Products team in PG&E's Customer and Corporate Affairs Department. In this capacity, I perform research on, and provide strategic recommendations regarding, PG&E product offerings related to pricing. I also engage in regulatory proceedings to advocate for regulatory directives that support PG&E customer needs and California policy goals.

Q 3 Please summarize your educational and professional background.

A 3 I received a Bachelor of Arts degree with a double major in Economics and Environmental Sciences from the University of California at Berkeley, in June 2000. In June 2009, I received a Master's degree in International Business and Environmental Policy from the University of California at San Diego's Global Policy School (formerly the School of International Relations and Pacific Studies). I have over 15 years of experience working on customer energy technologies and rates, in areas related to program management, tariffs, product management, and regulatory policy and market analysis, both at PG&E (2013 to present) and previously at the Center for Sustainable Energy (2010-2013).

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's General Rate Case Phase II proceeding:

- Exhibit (PG&E-6), "PG&E's Testimony Supporting Stop-Gap Interim RTP Pilots Extension Proposal"
- Chapter 1, "Policy Background and Organization of Testimony."

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF TYSEN F. STREIB

Q 1 Please state your name and business address.

A 1 My name is Tysen F. Streib, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am a Chief Rates Analyst in the Rates and Regulatory Analytics Department within the Regulatory Affairs organization at PG&E. and I am responsible for the design and operation of PG&E's filing-quality electric ratemaking models.

Q 3 Please summarize your educational and professional background.

A 3 I received a Bachelor of Science degree in Chemical Engineering from the University of California, Berkeley in 1997, and a Master's degree in Business Administration from Santa Clara University in 2006. From 1998 to 2006, I held various quantitative analysis and product management positions in the chemical analysis and semiconductor industries. From 2006 to 2007, I was a Product Manager for a small software company that designed stock market analysis tools. I joined PG&E's Finance organization in 2007, and then moved to PG&E's Regulatory Affairs organization in 2012, joining the Electric Rates team.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's General Rate Case Phase II proceeding:

- Exhibit (PG&E-3), "Revenue Allocation and Rate Design":
 - Chapter 2, "Revenue Allocation";
 - Chapter 2, Attachment A, "Required Distribution and Generation Changes for Each Year of the Transition Plan";
 - Chapter 2, Attachment B, "Rate Design Guidelines to Implement Revenue Requirement Changes";
 - Chapter 7, "Business Electric Vehicles Rate Design":
 - Sections B and E;

- 1 • Exhibit (PG&E-4), “Appendices”:
 - 2 – Appendix B, “Revenue and Average Rate Summary at Proposed
 - 3 Rates”;
 - 4 – Appendix C, “Present and Proposed Rates”;
 - 5 – Appendix H, “NEM and Non-NEM Cost of Service Study”;
- 6 • Exhibit (PG&E-5), “Real-Time Pricing Proposal”:
 - 7 – Chapter 2, “Real-Time Pricing and Load Management Standard
 - 8 Requirements”:
 - 9 • Sections A through L, M.1 through M.3, and N through Q; and
 - 10 – Chapter 2, Attachment A, “Marginal Generation Capacity Cost
 - 11 Pricing Formula for PG&E’s Day-Ahead Hourly Real-Time Pricing
 - 12 (DAHRTP) Rates, Report to Parties in California Public Utilities
 - 13 Commission (CPUC) Dockets A.20-10-011 and A.19-11-019, As
 - 14 Adopted in CPUC Decision 22-08-002, Dated August 4, 2022”;
- 15 • Exhibit (PG&E-6), “PG&E’s Testimony Supporting Stop-Gap Interim
- 16 RTP Pilots Extension Proposal”:
 - 17 – Chapter 2, “Overview of PG&E’s Stop Gap HFP Pilot Extension
 - 18 Proposal”:
 - 19 • Section E.2; and
 - 20 – Chapter 3, “Stop Gap Rate Design”:
 - 21 • Sections A through F and H.

22 Q 5 Does this conclude your statement of qualifications?

23 A 5 Yes, it does.

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF ORIANA TIELL

Q 1 Please state your name and business address.

A 1 My name is Oriana Tiell, and my business address is Pacific Gas and Electric Company (PG&E), 300 Lakeside Drive, Oakland, California.

Q 2 Briefly describe your responsibilities at PG&E.

A 2 I am a Principal Product Manager on the Vehicle Grid Integration (VGI) Analysis and Pilots team within PG&E's Clean Energy Transportation department. I am responsible for determining PG&E's regulatory strategy and compliance for the Business Electric Vehicle (BEV) rate and future VGI offerings.

Q 3 Please summarize your educational and professional background.

A 3 I have received a Bachelor of Science degree in Computer Science and a minor in Mathematics from the University of Akron, Ohio, in 1998. In 2008, I received a Master's degree in Business Administration, with a focus on Sustainable Management, from Presidio Graduate School. Prior to joining PG&E, I worked as a software engineer for over a decade, primarily in the financial sector. In 2011, I joined PG&E as a Senior Product Manager in the Energy Efficiency Department, where I took on roles of increasing responsibility supporting PG&E's Energy Efficiency portfolio of products and programs. In 2021, I transitioned to my current role as a product manager of the BEV rate. In this capacity, I am responsible for PG&E's regulatory strategy and development of dynamic pricing programs and pilots targeting VGI customers.

Q 4 What is the purpose of your testimony?

A 4 I am sponsoring the following testimony in PG&E's General Rate Case Phase II proceeding:

- Exhibit (PG&E-6), "PG&E's Testimony Supporting Stop-Gap Interim RTP Pilots Extension Proposal":
 - Chapter 2, "Overview of PG&E'S Stop Gap HFP Pilot Extension Proposal":
 - Section E.6.

Q 5 Does this conclude your statement of qualifications?

1 A 5 Yes, it does.