

Decision 21-11-017 November 18, 2021

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric
Company (U39M) for Approval of its
Proposal for a Day-Ahead Real Time Rate
and Pilot to Evaluate Customer
Understanding and Supporting Technology.

Application 20-10-011

**DECISION AUTHORIZING PACIFIC GAS AND ELECTRIC COMPANY TO
IMPLEMENT AN OPTIONAL DAY-AHEAD REAL TIME RATE FOR
COMMERCIAL ELECTRIC VEHICLE CUSTOMERS**

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**DECISION AUTHORIZING PACIFIC GAS AND ELECTRIC COMPANY
TO IMPLEMENT AN OPTIONAL DAY-AHEAD REAL TIME RATE FOR
COMMERCIAL ELECTRIC VEHICLE CUSTOMERS**

Summary

This decision requires Pacific Gas and Electric Company to offer an optional day-ahead, hourly real-time rate to customers that have enrolled, or are eligible to enroll, in its existing Business Electric Vehicle Rate. Authorizing this optional rate is consistent with state law requiring: (1) widespread transportation electrification; and (2) the identification of strategies to ensure vehicle charging largely occurs at times that are optimal for the grid.

The original proposal in the application forms the basis of the rate approved in this decision. However, this decision requires Pacific Gas and Electric Company to offer its proposed day-ahead, hourly real-time pricing rate not as a pilot limited to 50 customers, but as an optional rate for any customer that is eligible to enroll in the utility's Business Electric Vehicle rates. It also establishes requirements for customer outreach and education and the development of specific metrics and reporting requirements for evaluation of the opt-in rate over time.

Further, this decision does not authorize nor adopt the marginal generation capacity cost component proposed in the application. Instead, it directs Pacific Gas and Electric Company to collaborate with the Commission's Energy Division, the Public Advocates Office at the California Public Utilities Commission, and the Small Business Utility Advocates to conduct a study that will analyze multiple factors that should be considered when developing a marginal generation capacity cost factor for the optional real-time dynamic rate approved in this decision. This study shall be completed, filed, and served to the

service list of this proceeding no later than January 18, 2022 for consideration by the Commission.

Finally, this decision establishes a schedule for additional evidentiary hearing and party feedback on the marginal generation capacity cost factor study.

This proceeding remains open.

1. Background

California has prioritized the electrification of the transportation sector since 2015, and the Commission is tasked with identifying and approving electric rate designs that support the transition from conventional fuels to cleaner electricity. Separately, the Commission has encouraged regulated utilities to develop rate design options that more directly align with hourly grid conditions. For example, time-of-use (TOU) rates have been the default for commercial customers in California since 2012 and recent Commission decisions have adopted specific rates designed for customers that are operating or owning infrastructure to charge electric vehicles (EV).¹

In 2019, the Commission authorized Pacific Gas and Electric Company (PG&E) to create a new business electric vehicle (BEV) rate class and implement a rate for its BEV class that has more time-differentiated charges than PG&E's typical TOU rates, and a subscription charge specifically designed for commercial customers that are deploying EVs or owning and/or operating EV

¹ Time-of-Use pricing utilizes a per-unit-of consumption rate structure that varies depending on the time of day during which energy is consumed, with higher per-unit rates applied during blocks of hours in which electricity demand or costs tend to be higher. The Commission has adopted several EV-specific rates, including San Diego Gas & Electric Company's Power Your Drive rate, adopted in D.16-01-045, and its rate for high-powered EV charging adopted in D.20-12-023; Southern California Edison Company's commercial EV rate adopted in D.18-05-040; and PG&E's commercial EV rate adopted in D.19-10-055.

charging infrastructure. The new rate, adopted in Decision (D.) 19-10-055, was intended to support transportation electrification by offering commercial customers more predictable monthly bills that have a relatively fixed monthly surcharge based on a site's EV charging load.

On October 23, 2020, PG&E filed the instant application for approval of a dynamic rate option for commercial electric vehicle customers in response to Ordering Paragraph (OP) 9 of D.19-10-055, which authorized PG&E to implement its BEV rate class.² In Application (A.) 20-10-011, PG&E proposed a limited pilot for up to 50 customers that are already enrolled, or eligible to enroll, in its BEV schedule to switch to a day-ahead, hourly real-time pricing (DAH RTP) rate, collect and evaluate data related to the pilot participants' behavior, and provide incentives to electric vehicle drivers participating in the pilot.³ PG&E estimated its proposed pilot would cost between \$3,851,000 and \$5,953,000 to implement.⁴

Opening responses to A.20-10-011 were filed on November 23, 2020, by the Small Business Utility Advocates (SBUA) and the East Bay Community Energy and Peninsula Clean Energy (Joint Community Choice Aggregators). Additional opening responses were filed on November 30, 2020, by ChargePoint, Inc., the Environmental Defense Fund (EDF), and the Vehicle-Grid Integration Council. The Public Advocates Office at the California Public Utilities Commission

² D.19-10-055 OP 9 required PG&E to "file an application for a dynamic rate option for CEV . . . customers no later than 12 months after the effective date of this decision."

³ D.19-10-055 authorized PG&E to implement two BEV rates, one for customers up to 100 kilowatt (kW) and another for customers over 100 kW. Details of the approved rates, which were fully implemented in 2020, are available at https://www.pge.com/en_US/small-medium-business/energy-alternatives/clean-vehicles/ev-charge-network/electric-vehicle-rate-plans.page.

⁴ Exhibit PG&E-1 at 3-15 and 3-16.

(Cal Advocates) filed the only protest. PG&E filed a consolidated reply to the responses and protest.

A prehearing conference (PHC) was held on December 7, 2020, to address the issues of law and fact, determine the need for hearing, set the schedule for resolving the matter, and address other matters as necessary. Electrify America and Cruise Our Nation were granted party status during the PHC.⁵

The assigned Administrative Law Judge (ALJ) denied a request from PG&E to consolidate this application with portions of its General Rate Case II proceeding (GRC II) that relate to real-time pricing issues.⁶ The focus of the instant proceeding is to evaluate the rate option PG&E proposed to make available to customers that operate and/or offer charging services for EVs on a commercial scale, pursuant to D.19-10-055. Remaining issues related to offering real-time pricing options to PG&E's other customer classes are being considered in Phase II of PG&E's GRC Phase II proceeding, A.19-11-019.⁷

The Assigned Commissioner's Scoping Memo and Ruling (Scoping Memo) was issued on January 25, 2021, identifying the scope of issues and setting the schedule for this proceeding.

On March 25, 2021, Enel X North America (EnelX) was granted party status via an email ruling.

Pursuant to the Scoping Memo, PG&E held a meet-and-confer on May 12, 2021, to identify the issues that were resolved and the outstanding

⁵ PHC transcript at 7-8.

⁶ An Assigned ALJ Ruling issued on January 15, 2021 denied, with prejudice, PG&E's motion to consolidate A.20-10-011 with real-time pricing issues in A.19-11-019.

⁷ A revised Assigned Commissioner's Scoping Memo and Ruling was issued in A.19-11-019 on August 25, 2021 setting the procedural schedule for real-time pricing related issues in PG&E's GRC Phase II.

contested issues to be addressed in evidentiary hearing. A report from the meet-and-confer was filed and served to the service list of this proceeding.

Evidentiary hearings were held on June 1, 2, and 4, 2021, to hear testimony on the outstanding contested issues.

2. Issues Before the Commission

The Scoping Memo identified the following issues to be resolved in this proceeding:

1. Is PG&E's proposed commercial electric vehicle DAHRTP pilot compliant with OP 9 of D.19-10-055?
2. Is PG&E's proposed rate design just and reasonable as required by Public Utilities Code Section (Pub. Util. Code §) 451?
3. What are the potential bill impacts for customers, including unbundled customers and those not opting in to the proposed real-time pricing rate?
 - a. Are PG&E's proposals for costs – including the proposed technology and participation incentives; evaluation and reporting costs; and project management costs – and the proposed memorandum account to track and record costs reasonable?
 - b. How will the proposed rate affect average hourly rates for residential and commercial customer classes?
 - c. How will the proposed rate affect average hourly rates for customers already enrolled in PG&E's BEV rates?
 - d. Does the proposed revenue-neutral rate adder reflect the incremental costs of all customers, including unbundled customers, that may enroll in the dynamic rate?⁸

⁸ PG&E Testimony Section at 2-5.

- e. Will the proposed dynamic rate option for BEV customers be applied in a competitive neutral manner between bundled and unbundled customers?
- 4. Is the proposed pilot design reasonable and in the ratepayers' interests, as required in Pub. Util. Code § 740.12?
 - a. Are the proposed customer eligibility limitations appropriate?
 - b. Is it appropriate to limit participation to 50 customers that have already enrolled in PG&E's BEV rate?
 - c. Are the proposed costs justified to offer a limited pilot rate?
 - d. Could the proposed system upgrades and associated costs be leveraged to offer the proposed rate as a broader opt-in rate for BEV customers?
 - e. Is the proposed evaluation, measurement, and verification framework appropriate?
- 5. Does the Application align with the nine goals of the Commission's Environmental and Social Justice Action Plan?
- 6. Should PG&E be granted until 2023 to fully implement its proposed dynamic rate as proposed in its testimony and referenced at the PHC?⁹

3. PG&E Proposed Pilot Rate

PG&E's application proposed a DAH RTP rate pilot for commercial customers that are deploying EVs and associated charging infrastructure. To be eligible under PG&E's proposal, customers would need to have already enrolled or be eligible to enroll in PG&E's BEV rates.¹⁰

⁹ PHC Transcript at 18-21.

¹⁰ Exhibit PG&E-1 at 1-24.

D.19-10-055 created a new customer class for PG&E's commercial electric vehicle customers, and authorized PG&E to offer a specialized, subscription-based rate to customers that are deploying, owning and/or operating electric vehicle charging equipment that is separately metered from other facilities and energy uses. PG&E's BEV rates became available in 2020.¹¹ In A.20-10-011, PG&E included specific information required by D.19-10-055 related to the design of and appropriateness of the proposed rate.¹²

PG&E's proposed pilot would establish a rate rider to replace the current TOU generation rate on its existing Schedules BEV-1 and BEV-2 with a generation rate that is derived from the California Independent System Operator's (CAISO) day-ahead hourly wholesale market, the forecasted load on the system, and the forecasted amount of available greenhouse gas (GHG) free generation.

PG&E's proposed DAH RTP rate includes three components:

1. Marginal energy cost (MEC) to serve pilot participants, recovered by a CAISO hourly day ahead market rate component;
2. Generation costs of service above marginal costs, to be recovered by a flat volumetric rate adder; and
3. Marginal generation capacity costs (MGCC), recovered by a generation capacity component based on PG&E's proposed hourly generation peak capacity allocation factor (PCAF) method.

¹¹ PG&E's BEV rates were adopted in D.19-10-005. The BEV rates include a set subscription charge that aims to provide a more stable, and potentially lower, monthly surcharge than the otherwise applicable monthly demand charge for commercial customers that are charging or supporting the charging of electric vehicles.

¹² See Exhibit PG&E-1 Table 1-1 (at 1-6 through 1-8).

Issue 2 of the Scoping Memo requires us to evaluate whether PG&E's proposed rate design and pilot structure is just and reasonable under Pub. Util. Code § 451. In this section, we discuss aspects of the proposed DAH RTP rate related to the first two components. Issues related to the MGCC component are discussed in Section 5, *infra*.

3.1. MEC and Day-Ahead Real-Time Pricing

As PG&E notes, "[t]he theoretical appeal of dynamic rates is that energy users receiving price signals from the wholesale market will provide more effective and targeted load shifting and reduction response than they would on a conventional TOU rate. This creates benefits for customers, the environment, and the grid, and results in lower overall costs."¹³

One component of PG&E's rate proposal is the MEC which is comprised of the loss-adjusted day-ahead prices at PG&E's default load aggregation points (DLAP). PG&E stated that the MEC prices are available on CAISO's Open Access Same-Time Information System at 1:00 p.m. prior to each operating day, providing the day-ahead aspect of the MEC. PG&E proposed to use a loss factor of 1.069 system-wide to represent costs at the secondary distribution level.¹⁴

Cal Advocates notes that PG&E's proposal to base the proposed DAH RTP rate on CAISO day-ahead prices "would produce much greater accuracy in sending marginal cost price signals than a traditional TOU rate, while giving EV customers greater opportunity to reduce their fuel costs by charging during hours when MEC are low."¹⁵ We find PG&E's intent to base the MEC on CAISO's day-ahead pricing and average DLAP loss factor to be reasonable based

¹³ Exhibit PG&E-1 at 1-9 to 1-10.

¹⁴ Exhibit PG&E-1 at 2-2 and 2-3.

¹⁵ Cal Advocates-1 at 1-5.

on the record of this proceeding. PG&E shall develop an MEC based on CAISO's day-ahead pricing and average DLAP loss factor for the optional day-ahead real time rate adopted in this proceeding.

3.2. Volumetric Rate Adder and Revenue Neutrality

PG&E proposed to include a flat adder, which would not vary by time of use, to collect non-marginal generation costs as necessary to ensure the rate is revenue neutral. PG&E stated that because the BEV schedules are so new, it lacks sufficient data to develop a class-specific generation rate. Therefore, it proposed to base the revenue-neutral rate adder on its bundled system-wide average generation rate.¹⁶

In testimony, EnelX and SBUA agreed that a rate adder could help buffer the revenue impact of the proposed pilot rate. However, both parties argued the rate adder should be time-differentiated to reflect PG&E's BEV Schedules' TOU periods. EnelX and SBUA each proposed different methods to calculate a time-variant revenue-neutral rate adder, but both proposals provided the same generation rate.¹⁷

PG&E in rebuttal argued that the BEV rate has a very high peak generation rate which is not cost-based, but instead is designed to highly incentivize off-peak charging and encourage electrification of commercial fleets.

Rather than continuing to litigate the revenue-neutral rate-adder, PG&E, EnelX, and SBUA served a joint stipulation regarding the components of the revenue-neutral rate adder and reached an agreement on TOU variation based on preliminary load profiles of customers that are enrolled on the BEV

¹⁶ Exhibit PG&E-1 at 2-5 to 2-6.

¹⁷ Exhibit EnelX-1 at 9; Exhibit SBUA-1 at 16-18.

schedules.¹⁸ Under the stipulation, the following revenue-neutral adders would be included in the day-ahead real-time pricing:

TOU Period	Flat Revenue-Neutral Adder without PCIA	TOU Revenue-Neutral Adder without PCIA
Peak	\$0.01972	\$0.14304
Off-Peak	\$0.01972	\$0.00519
Super Off-Peak	\$0.01972	\$0.00519

The parties note that there may be instances when the CAISO market drops below the off-peak revenue-neutral adder, which could create a negative generation rate for the day-ahead real-time rate.¹⁹ However, for the purpose of testing the day-ahead, hourly real-time rate proposed by PG&E, the parties agreed that a rate design with the potential for a negative generation rate is acceptable, as long as the consequences associated with this rate design and any times of negative pricing are thoroughly evaluated. In comments on the Proposed Decision, PG&E noted that the revenue-neutral adder values are not fixed and that the values listed in the table above are illustrative and based on the revenue requirement on May 1, 2020.²⁰ Therefore, we clarify that the revenue-neutral adders described in the table above may be updated via a Tier 1 advice letter to reflect the revenue requirement at the time of implementation and periodically thereafter based on changes in PG&E's revenue requirement.

¹⁸ Exhibit PG&E-21.

¹⁹ *Ibid.* at 3-4.

²⁰ PG&E Opening Comments on the Proposed Decision at 10-11.

As noted by PG&E, this stipulated revenue-neutral rate adder is not cost-based.²¹ This rate, however, is intended to incent and provide affordable, innovative charging options for commercial customers providing and/or utilizing EV charging infrastructure. While we always promote cost-based rate designs and seek to avoid cross-subsidies, we recognize that there may be occasions in which rate elements, such as the revenue-neutral rate adder, that are stipulated to by parties may be a reasonable and efficient approach that is consistent with statewide policies and do not result in unintended bill impacts to non-participating ratepayers. Therefore, in accordance with the Commission's previous guidance in D.17-01-006 and D.19-10-055, and state policy generally aiming to incent widespread transportation electrification and lower the costs of EV ownership and fueling, we find this stipulation reasonable for PG&E's optional day-ahead real-time pricing rate adopted in this decision.²² PG&E shall implement the TOU-based revenue-neutral rate adders as agreed upon in Exhibit PG&E-21 and updated to reflect its current revenue requirement at the time of implementation and in the future.

3.3. Subscription Charges

According to Electrify America, which is a Direct Current Fast Charging (DCFC) station owner and operator, the existing BEV rate is suboptimal for DCFC station operators because they are forced to manage costs and operations in 50 kW increments to avoid potential increases in their subscription charge. Electrify America argued that DCFC sites would still be unable to fully manage their own charging operations and storage or renewable energy facilities under

²¹ Exhibit PG&E-4 at 1-8 and 1-9.

²² D.17-01-006 at 11; D.19-10-055 at 30.

the rate design proposed in A.20-10-011, because the subscription charge presumes a consistent baseline load.²³

Electrify America also argued that “public electric vehicle charging usage at DCFC sites is generally considered inelastic in nature and not able to readily respond to time-varying incentives or grid conditions given the use case to quickly refuel.” To address the peaky loads at its facilities, Electrify America stated it is in the process of pairing more than 125 of its DCFC locations with behind-the-meter storage designed to capture lower-cost solar generation and using it to charge vehicles at its stations during times of higher generation costs and/or grid stress.²⁴

Cal Advocates and PG&E both note that the issues Electrify America raised related to the proposed rate’s subscription charges were each investigated, litigated, and resolved in D.19-10-055.²⁵

We agree with PG&E and Cal Advocates that PG&E’s proposed DAH RTP is a generation rate adder that BEV customers can opt into, and the associated subscription rate was fully litigated in A.18-11-003 and adopted in D.19-10-055. The BEV rate is a separate customer class that was intentionally designed to support broader adoption of electrified transportation. The subscription charge adopted in D.19-10-055, while not a full elimination of subscription based charges, was designed to “substantially reduce the subscription charge while maintaining energy rates with strong peak and off-peak price signals.”²⁶ A full

²³ Exhibit Electrify America-1 at 10-11.

²⁴ *Ibid.*

²⁵ Exhibit Cal Advocates-2 at 1-2; PG&E Reply Brief at 16-18.

²⁶ D.19-10-055 at 22 and 45. D.19-10-055 directs PG&E to collect only marginal distribution revenue from the BEV class, primarily to “substantially reduce the subscription charges in the three CEV rates.”

elimination of the subscription charge could shift incremental customer access costs (such as final line transformer costs) associated with DCFC and other commercial EV charging sites that choose to enroll in the DAHRTP onto other BEV customers.²⁷ The Proposed Decision found that the record of this proceeding does not adequately discuss the potential impacts of wholly removing or modifying the subscription charge for customers that opt to enroll in the DAHRTP or to develop an alternative to the subscription rate adopted in D.19-10-055. As noted by PG&E, “there would be load-management advantages to dynamic distribution prices, but it is not as straightforward as generation pricing that can be implemented based on system average conditions. More research and analysis need to be conducted before distribution is added as a [real-time] component.”²⁸

In comments on the Proposed Decision, Electrify America argued that D.19-10-005 does not specifically prohibit PG&E from considering a dynamic rate design that completely eliminates the subscription charge. Further, Electrify America purports that we ignored its proposals for a volumetric-only rate that would better support its business model of installing solar generation and storage at its DCFC facilities.²⁹ Electrify America also proposed a new strategy for an end-of-pilot true-up mechanism that would have customers enrolled on the DAHRTP rate pay for any under-collection of costs associated with the elimination of a subscription charge.³⁰

²⁷ PG&E Reply Brief at 18.

²⁸ Exhibit PG&E-02 at 2-16.

²⁹ Electrify America Opening Comments on the Proposed Decision at 4-6.

³⁰ *Ibid* at 9.

While we agree that D.19-10-055 did not include any specific prohibition on PG&E designing and proposing a rate that eliminates subscription charges,³¹ what PG&E proposed in the instant application is a rate that layers dynamic pricing onto its authorized BEV tariffs. Upon review of Electrify America's written and oral testimony and its comments on the Proposed Decision, we are unable to find a structured or implementable proposal for the design of any volumetric-only rate, let alone one that would meet the provisions established in D.19-10-055 which PG&E was directed to address in this application. Further, Electrify America's description of Cal Advocates' and PG&E's "admissions" throughout its opening comments on the Proposed Decision do not include the contextual clarifications that each party's witness made during oral testimony. For example, Cal Advocates argued that "Electrify America wants to capture electricity from hours with low energy costs, which is not the same as times with low distribution system costs, and to use that energy during times of high energy costs. And [Electrify America] does not wish to use storage to manage its customer maximum demand levels at all."³² So although Cal Advocates may have agreed that the DAHRTP could be an opportunity to review how battery storage combined with real-time pricing affects load response,³³ Cal Advocates also clearly stated it believes Electrify America is not intending to use its on-site storage to manage its DCFC sites' demand levels.

Similarly, PG&E's witness agreed that "capturing low-cost renewable energy produced at times of low system demand and making it available at times of high system demand would provide a benefit to the company's

³¹ *Ibid* at 6-8.

³² Evidentiary Hearing Transcript Volume 2, at 223 lines 7-15 and lines 21-26.

³³ Electrify America Opening Comments on the Proposed Decision at 6.

transportation efforts,” but throughout testimony on this issue Electrify America and PG&E were unable to come to an agreement on what making energy “available” means.³⁴ Electrify America’s own witness stated that its intent for installing on-site storage is to make lower-cost energy available to offset the costs for operating its own DCFC stations, and potentially decrease costs for customers charging at its DCFC stations, rather than make that energy available to PG&E’s broader customer base.³⁵ It is unclear how Electrify America’s proposal to use on-site generation and storage to reduce its own sites’ energy costs would impact the cost of service to its charging stations. Under PG&E’s proposed DAH RTP rate, all customers, including DCFC sites, will pay for the cost of service through a fixed subscription charge and dynamic pricing that allows flexibility for a site host to change or modify the rates charged to customers in a manner that reflects grid costs on an hourly basis.

We find that the record fails to support Electrify America’s argument posed in opening comments to the Proposed Decision that it provided any formal alternative proposal that would better support its business model by wholly eliminating the subscription charge. Although Electrify America’s high-level proposal to use battery storage of renewable energy generation could potentially reduce its customers’ charging costs and its own site-specific energy costs, it has not explained whether or how its internal cost savings would result in a broader system benefit to the grid. Therefore, we find it reasonable for PG&E to maintain the subscription charges authorized in D.19-10-055 to implement the DAH RTP rate adopted in this decision. We agree with Electrify

³⁴ Evidentiary Hearing Transcript Volume 1, at 154-158.

³⁵ Evidentiary Hearing Transcript Volume 2, at 286 lines 2-13.

America that “no precise analysis has been conducted regarding advanced methods of reducing costs and incenting transportation electrification in the context of battery storage and solving the problem of capturing the cheapest solar energy at times of surplus generation.”³⁶ We clarify that nothing in this decision or D.19-10-055 specifically prohibits PG&E from designing and proposing a volumetric-only rate that is more specifically targeted to address Electrify America’s business model or other facilities that incorporate on-site storage and renewable energy generation. However, the DAH RTP rate considered in this proceeding is designed to be applicable to multiple customer segments and to be implementable within a short timeframe. Further consideration of alternative mechanisms to recover customer access costs and address complexities related to on-site generation and storage impacts will occur as the Commission continues to consider the barriers non-coincident demand charges may pose to the adoption of distributed energy resources and other load-shifting technologies.

4. Pilot Design

PG&E’s application would offer its real-time pricing pilot to up to 50 customer sites that have enrolled in its Schedules BEV-1 and BEV, and would specifically target customer sites that provide public DCFC stations; workplaces that provide employee and/or public charging; multi-family residential dwelling units that provide charging for their residents and/or public use; transit operators; and medium-duty delivery operators that operate on-site charging for EVs.³⁷ PG&E suggested the opt-in pilot rate would be available for 36 months,

³⁶ *Ibid* at 4.

³⁷ Exhibit PG&E 1 at 1-19 to 1-23; Exhibit PG&E-4 (at 3-6 to 3-7) explains that while these targeted sectors do not represent all of the customer types that may enroll in the BEV rates, any
Footnote continued next page.

and that up to two community choice aggregators that operate in its service territory could participate.

4.1. Driver and Site Host Incentives

PG&E proposed a budget of up to \$1.295 million to provide one-time EV-owner incentives to encourage participation in the pilot rate and/or technology-specific incentives that would support upgrading a customer's existing system to enable automated integration with PG&E's customer enablement tool.³⁸ Specifically, PG&E proposed to spend up to \$164,000 to incent individual EV drivers to participate in feedback surveys on its DAHRTP rate and \$1.095 million for technology incentives.³⁹

PG&E assumed that customers enrolled on its BEV schedules have, on average, 10 EV charging ports per account and that not every one of a site's charging ports would be in use simultaneously. PG&E stated that it will provide incentives to no more than 500 EV drivers for its proposed pilot.⁴⁰ Further, PG&E stated that drivers utilizing DCFC stations are not eligible for the incentive, due to the complexity of identifying and tracking individual drivers. Although PG&E acknowledged that the plurality of customers currently enrolled on the BEV rate are DCFC charging sites and thus ineligible for the cash incentive, PG&E contended that cash incentives are necessary to attract other

customer enrolled on the BEV rate would be eligible to participate in the proposed day-ahead, real-time pricing rate.

³⁸ Exhibit PG&E-1 at 1-25 and 1-26.

³⁹ Exhibit PG&E-1 at 3-19, Table 3-3.

⁴⁰ Exhibit PG&E-1 at 1-24.

drivers to participate in the pilot and provide data and survey responses associated with their experiences.⁴¹

In comments on the Proposed Decision, PG&E suggests that “[w]ithout an incentive, there is little reason for drivers to complete a survey to share their experience.”⁴² Throughout PG&E’s testimony and its opening comments, however, it neglects to fully explain how the “drivers’ experience and driving data using electricity obtained from BEV customers” will improve its evaluation of whether the DAH RTP rate is effective in sending dynamic pricing signals to customers enrolled in the opt-in rate. We therefore find the need for driver incentives unpersuasive. PG&E should develop adequate marketing, education, and outreach (ME&O) tools that can describe the potential bill savings for different EV charging use cases. Customers deploying, owning and/or operating EV charging infrastructure should be able to consider the rates available to them, including this optional DAH RTP rate, and determine which rate is optimal for their EV charging or charging station operating schedules, without providing individual drivers incremental incentives recovered from ratepayers. As discussed further in Sections 4.2 and 4.3, *infra*, PG&E should develop ME&O materials and a customer enablement tool that allow customers to make their own determination on the best rate for their business(es). PG&E shall not recover costs related to any incremental incentives to attract individual drivers to participate in this optional, dynamic real-time pricing rate.

⁴¹ PG&E Opening Brief at 23. “As of April 2021, DCFC charging sites represent 245 of the current 320 [service agreements] currently on the BEV rate schedule, and DCFC chargers will be excluded from the 500 individual driver cap.” (*Footnote omitted*)

⁴² PG&E Opening Comments on the Proposed Decision at 14.

We agree, however, that in some cases customers may need to upgrade existing EV charging infrastructure to accommodate the technology needed to send hourly, day-ahead pricing signals. Therefore, PG&E is authorized to recover up to \$1.295 million in one-time rebates to cover technological upgrades necessary to enable customers' existing charging infrastructure to automatically respond to the day-ahead real-time pricing rate approved in this decision. As PG&E clarified in opening comments to the Proposed Decision, this incentive could be paid to either customers that own and operate their own charging stations and software or third-parties that provide charging equipment and technology.⁴³ No later than 90 days following the issuance of this decision, PG&E is directed to file a Tier 2 advice letter describing its rebate program to cover technological upgrades necessary for customers that have existing EV charging infrastructure to ensure they can receive the automated pricing signals associated with its optional, day-ahead, real-time BEV rate.

4.2. Customer Enablement Tool

PG&E estimated it would spend between \$1.7 and \$2.4 million to develop a new "customer enablement tool" to provide communication of day-ahead pricing to customers. PG&E stated this tool would be separate from its billing system and solely intended to "provide pilot participants access to hourly pricing information." PG&E further stated this tool would enable energy service providers and other load-serving entities as well as technology providers to deliver their real-time pricing information to customers throughout PG&E's service territory.⁴⁴

⁴³ PG&E Opening Comments on the Proposed Decision at 13.

⁴⁴ Exhibit PG&E-4 at 4-1 and 4-2.

PG&E suggested that a real-time rate may be “significantly simplified for customers if automated technology is used to manage charging to align with low-cost hours.”⁴⁵ It therefore proposed to develop a customer enablement tool that would push prices directly to participating customers.

EDF argued that PG&E should not “expensively recreate the wheel” as it relates to customer communication tools and should instead consider leveraging existing third-party customer price interface tools for its pilot.⁴⁶ EnelX noted that the California Energy Commission (CEC) is developing a Market Informed Demand Automation Server (MIDAS) platform through its current initiative to update load management standards. According to EnelX, the MIDAS platform would “serve as a clearinghouse for customers and third parties to access rates offered by the five largest utility territories in the state,” including PG&E.⁴⁷ EnelX noted that because PG&E may be implementing additional real-time pricing rates through its 2021 GRC II proceeding (A.19-11-019) and will likely be required to provide information on its hourly rate schedules to MIDAS, any cost recovery authorized in this proceeding should consider the need for a broader implementation of the “customer enablement tool” than proposed by PG&E.⁴⁸

PG&E argued that it intends to leverage platforms offered by its existing vendors to calculate and disseminate real-time pricing signals to customers to the extent feasible. PG&E also stated that the complexity of the authorized dynamic rate structures, in both this application and in A.19-11-019, will affect the final cost of developing a platform that allows the sharing of real-time pricing signals

⁴⁵ Exhibit PG&E-1 at 1-15.

⁴⁶ Exhibit EDF-1 at 18-19.

⁴⁷ Exhibit EnelX-2 at 6.

⁴⁸ *Ibid.*

from PG&E and other load-serving entities to customers across its service territory.⁴⁹

We find EDF and EnelX's points persuasive and direct PG&E to leverage existing platforms or those being developed by the CEC to disseminate real-time pricing signals at the lowest possible cost to customers. Therefore, the Proposed Decision capped PG&E's budget for developing its customer enablement tool at the lowest estimate provided in its application, \$1.7 million. Upon review of comments to the Proposed Decision, described in more detail below, we revise the cap to be \$2.4 million, which is the higher end of PG&E's proposed budget.⁵⁰

In comments on the Proposed Decision, PG&E argued that its customer enablement tool was only intended to calculate rates each day and push them to customers enrolled in the DAHRTP rate. It argued that rate comparison tools would not be possible to create because future real-time prices are not predictable. We disagree. PG&E has not persuaded us that it cannot create a tool that predicts customers' rates on the existing BEV or otherwise-applicable tariff and compares them with a projected cost if it were to have enrolled in the DAHRTP rate, based on that customer's historical usage and historical hourly rates. Similar tools exist to encourage enrollment on the BEV rate and although the DAHRTP rate includes varying hourly pricing, the prior-year's data and/or other relevant information could be used to develop an informational tool customers can use to determine their potential savings associated with enrolling in the opt-in DAHRTP rate. Therefore, we authorize PG&E to spend up to \$2.4 million to develop a customer enablement tool that:

⁴⁹ Exhibit PG&E-4 at 4-3.

⁵⁰ Exhibit PG&E-1 at 3-3.

1. Calculates hourly rates on a daily basis;
2. Disseminates the calculated hourly rates to customers enrolled in the DAH RTP rate; and
3. Provides potential customers a tool to compare their estimated electric costs on the customer's otherwise applicable schedule(s) to those they would incur on the DAH RTP opt-in rate.

We also find that PG&E's development and deployment of any new customer enablement tool should align with the CEC's development of its MIDAS rate database, shall provide any necessary incremental information to the CEC to ensure this new rate is reflected in the MIDAS database.

As PG&E noted in its comments on the Proposed Decision, it did not include a rate comparison tool in its proposed budget. Therefore, no earlier than 12 months following the issuance of this Decision, PG&E may file a Tier 2 advice letter seeking authorization to spend up to another \$1.7 million to finalize and implement the rate comparison tool if it fully exhausts the \$2.4 million authorized above. The advice letter shall, at a minimum, provide a line item list of the expenditure of the initial \$2.4 million, a forecast of when the customer enablement and rate comparison tools will be completed, and what the incremental \$1.7 million will be used to support. PG&E's request for an incremental \$1.7 million in funding to support the implementation of its DAH RTP customer enablement and rate comparison tools will be evaluated based on the current status of the tools, the line item budget for the initial funding, and the remaining costs and tasks associated with developing and offering the tools to customers eligible to participate in the DAH RTP.

4.3. Marketing, Education, and Outreach

PG&E proposed to limit its pilot to customers enrolled in its BEV schedule that have existing installed EV charging infrastructure. The bulk of its proposed

ME&O plan focused on enrolling existing BEV account holders, providing educational materials, and conducting customer research to evaluate how many customers would be interested in enrolling in a day-ahead real-time pricing rate to determine any barriers or motivations for participation. PG&E proposed to conduct direct customer outreach and partner with technology providers to offer load management solutions to customers considering enrollment in the new rate.⁵¹

PG&E also stated that it “will be educating prospective participants in this Pilot about the potential benefits of a [real-time pricing (RTP)] rate, including potential cost savings if customers can charge during lower-priced periods. Therefore, PG&E expects customers will have evaluated whether the RTP is likely to be cost-effective for them before they enroll.”⁵² It proposed to use a “test and learn approach” that includes qualitative and quantitative evaluation of customers’ experiences on the dynamic rate to identify any barriers, motivations, and areas for improvement. PG&E estimated a budget of \$153,000 to \$443,000 to conduct its proposed ME&O program, which would include:

1. \$33,000 to \$218,000 for customer acquisition and developing sales support tools for one-to-one outreach;
2. \$20,000 to \$25,000 to maintain acquired customers and develop vendor support tools; and
3. \$100,000 to \$200,000 to research customer experience and track and evaluate customer insights.⁵³

⁵¹ Exhibit PG&E-1 at 3-12 to 3-13. PG&E proposed to collect and evaluate metrics related to (1) how many customers were reached via direct outreach versus teleservices; (2) the number of customers contacted compared to the number of customers enrolled on the new rate; (3) the total number of ME&O collateral pieces developed for PG&E and external collaborator/stakeholder use; and (4) responses to surveys.

⁵² Exhibit PG&E-2 at 3-22.

⁵³ *Ibid* at 3-15.

EDF argued that PG&E's proposed ME&O strategy is lacking specific targeting for the different BEV customer segments that could participate in a day-ahead real-time pricing rate.

EDF noted that "[e]ffectively communicating fuel cost savings relative to diesel that can be derived from managed charging, as well as environmental and grid benefits, should be integral to PG&E's ME&O efforts, modified as necessary for the intended audience," and that "PG&E's ME&O plan should be tailored to the pilot's different market segments and use cases, with messaging aligned to meet the needs of small fleets, and low-income and disadvantaged communities." According to EDF, this more targeted ME&O should be provided in multiple formats and languages and should be developed in collaboration with local community benefit organizations, community advocates, EV manufacturers, and third-party EV charging station providers."⁵⁴

SBUA also argued that PG&E or any community choice aggregators (CCAs) implementing this day-ahead real-time pricing rate should specifically conduct outreach to and enroll at least three small business customers that offer workplace charging and three other small business customers that have medium-duty delivery fleets of EV and the associated charging equipment.⁵⁵

We agree with EDF and SBUA that PG&E's ME&O efforts should include targeted materials and strategies to inform all eligible customer segments about the potential benefits associated with enrolling in a DAHRTP rate. The materials developed to inform customers about this new optional rate should describe potential cost savings and operational efficiencies in multiple languages and

⁵⁴ Exhibit EDF-1 at 19-21.

⁵⁵ Exhibit SBUA-1 at 20-26.

should vary based on the specific customer segments that are eligible to enroll in the opt-in rate. Therefore, we authorize PG&E to recover up to the higher estimate of its ME&O budget, \$443,000, to develop targeted and multi-faceted outreach tools and conduct more thorough customer education efforts to inform eligible customers about the potential benefits of opting into real-time pricing for EV charging.

In comments on the Proposed Decision, EDF reiterated its recommendation for the adoption specific targets for the number of customers PG&E should enroll on the DAHRTP rate in different segments.⁵⁶ However, EDF did not propose a formal timeline or any concrete strategy by which PG&E could accomplish the targets it has proposed. Therefore, we find it is not reasonable to adopt a specific enrollment target across the different customer segments EDF identified. However, we note that the California Air Resources Board is adopting very specific requirements for various commercial customer segments to transition to zero-emission vehicles and direct PG&E to work with the parties to this proceeding to develop ME&O assets that specifically address the different segments identified in EDF's opening comments to the Proposed Decision.⁵⁷

⁵⁶ EDF Opening Comments on the Proposed Decision at 2-3.

⁵⁷ See Table One of EDF's Opening Comments on the Proposed Decision at 3, and EDF's Opening Brief at 7.

Segment	Potential Institutional Partners
Public Sector Fleets	Public works, water departments
Public Transportation	School and/or municipal bus fleets
Medium Duty Delivery	FedEx, Ryder, UPS, United States Post Office
Medium Duty Agricultural	J.G. Boswell Company, Wonderful, Sysco
Transportation Network Companies	Cruise, Lyft, Uber
Heavy-Duty Transit/Delivery Nodes	Truck stops, ports
Public/Workplace Charging Stations	ChargePoint, PG&E
Community Choice Aggregators	Marin Clean Energy, East Bay Community Energy
Recreational Facilities, Residential Developments	Golf courses, amusement parks, adult communities

4.4. Dual Participation

PG&E proposed to exclude customers that are already enrolled in other “load management approaches” to better isolate how the new rate shifts participating customers’ load.⁵⁸ According to PG&E, “customers on this option will be receiving hourly [day-ahead, real-time] rate signals that include an accurate capacity component based on the CAISO market, [so] they would not be eligible for critical peak pricing options such as Peak Day Pricing . . . demand response programs, and the Demand Response Auction Mechanism (DRAM).”⁵⁹ Further, PG&E argued the Commission established dual-participation rules for

⁵⁸ According to PG&E, “Other load management approaches are also the scenarios for dual participation with a real time rate. Examples include but are not limited to rate riders (e.g., Smart Rate and PDP), DR Programs [e.g., Capacity Bidding Program (CBP), SmartAC, Base Interruptible Program (BIP)], Energy Efficiency (EE) (e.g., EE Pay for Performance), Bilateral Contracts (e.g., a Resource Adequacy (RA) only contract from a DR resource), and pilots (e.g., the DRAM Pilot or the Emergency Load Reduction Pilot).” (See Exhibit PG&E-3 at 1-2 to 1-6).

⁵⁹ Exhibit PG&E-1 at 2-6.

demand response programs dating back to 2009 and most recently reiterated in D.17-12-003.⁶⁰

We agree that participation in other load-modifying demand response programs raises dual compensation concerns because Resource Adequacy capacity values are embedded into the DAHRTP rate.⁶¹ Furthermore, an evaluation of the customer response to the DAHRTP rate would be complicated with multiple load-modifying price signals. In comments on the Proposed Decision, however, Electrify America argued that under the proposed full prohibition of dual-participation, facilities with on-site storage would have to choose between participating in the DAHRTP and providing frequency regulation services.⁶² Participation in the CAISO's ancillary services market, which includes frequency regulation services, is not part of the compensation stream of PG&E's proposed DAHRTP rate.⁶³ Pursuant to D.18-01-003, we note that compensation for ancillary services must be incremental or distinct from the pricing signals provided through the DAHRTP rate.⁶⁴ Because participation in

⁶⁰ See Exhibit PG&E-3 at 1-7, including footnote 17: "D.17-12-003, pp. 33-34, referenced D.12-04-045 and a resolution (Res. E-4630) that classified CPP and PDP programs as event-based programs. D.17-12-003 also cited D.15-11-042's designation of CPP and RTP as non-event-based load modifying programs as presenting a differing view. However, D.17-12-003 did change existing policy."

⁶¹ Evidentiary Hearing Transcript Volume 1, at 111, lines 9-15. Witness Gilbert stated the day-ahead, hourly real-time pricing rate will "enable PG&E to understand the load response of participants on this [rate] and determine its incremental load impact. That can be best done when there is not dual participation allowed."

⁶² Electrify America Opening Comments on the Proposed Decision at 13.

⁶³ See Electrify America Opening Comments on the Proposed Decision at 12-13. While Electrify America suggests that CAISO "administers" demand response programs, we note that CAISO only manages markets, including a market for resources that provide ancillary services such as frequency regulation.

⁶⁴ D.18-01-003 at 12 and 19.

the ancillary services market is not directly correlated with the energy market price, the evaluation of customer responses to price signals from the DAH RTP rate should not be meaningfully impacted. Therefore, we direct PG&E to allow customers that participate in CAISO's ancillary services markets to also enroll in the DAH RTP if they are otherwise eligible to do so. Further, PG&E should revisit the potential inclusion of customers that participate in other demand response programs after it has evaluated the DAH RTP rate and its associated load impacts, as further described in Section 8, *infra*.

4.5. Submetering

EnelX's recommendation to expand PG&E's proposed DAH RTP rate to residential customers comprises the majority of the record related to submetering in this proceeding.⁶⁵ As discussed further in Section 5, *infra*., we do not find it reasonable to require PG&E to expand this proposed dynamic rate, which was designed specifically for customers within its BEV class, to residential customers.

We agree with PG&E that it is premature to require the utility to enroll submetered customers on the day-ahead, hourly real-time rate at this time, because the issues related to that technology are still under review by the Commission and stakeholders of the Rulemaking to Develop Rates and Infrastructure for Vehicle Electrification (R.18-12-006).⁶⁶ We recognize PG&E's concerns that the Commission has not yet adopted a submetering protocol or authorized the utilities to update their billing and metering systems to accommodate sub-metered data. Further, we note Cal Advocates' concern that "the data for a real-time pricing rate may need different formatting, or have

⁶⁵ Exhibit EnelX-1 at 7-8.

⁶⁶ PG&E opening brief at 27.

greater data throughput than a TOU rate, and therefore require more stringent data network parameters that may be easily accommodable for separate metering, but not for submetering.”⁶⁷

This decision, however, recognizes the role that submetering can play in resolving the issues faced by PG&E and customers that would otherwise be required to install a separate meter to enroll in the DAHRTP rate. Therefore, consistent with D.19-10-055, we find that when submetering becomes an approved and accepted means of metering commercial electric vehicle service equipment (EVSE) load, then a separate meter should no longer be required to take service on a BEV rate.⁶⁸ This applies to all eligible BEV rate customers including those enrolled on the DAHRTP rate.

5. Pilot vs. Optional Rate for all BEV Customers

Issue 4 of the Scoping Memo requires an evaluation of the reasonableness of PG&E’s proposed pilot size and scope. PG&E stated it proposed a pilot-scale roll-out of its DAHRTP option due to ongoing uncertainty about the number of customers that would be interested in enrolling in such a dynamic rate, whether a real-time rate would result in savings for all BEV customers, and the types of technology and automated communication necessary for customers to fully deploy the rate.⁶⁹ PG&E estimated up to \$1.041 million in costs to upgrade its complex billing system to accommodate the DAHRTP prices, \$40,000 to design the proposed pilot, and \$670,000 to implement the proposed pilot.⁷⁰

⁶⁷ Exhibit Cal Advocates-1 at 2-12.

⁶⁸ D.19-10-055 at 38.

⁶⁹ A.20-10-011 at 2-3.

⁷⁰ Exhibit PG&E-1 at 3-9, 3-16 to 3-18 and Table 3-3 at 3-19.

PG&E stated that because the customers enrolling in the new day-ahead real-time rate are “already learning how to switch from a traditional source to electricity as a fuel source, we really wanted to take a measured approach to implementing a real-time pricing type of rate for this particular group of customers.”⁷¹ PG&E, however, also admitted that its proposed pilot size, with a cap of only 50 potential customers, may not provide significant, actionable findings that could ultimately improve understanding of customers’ responses to day-ahead, real-time electric rates.⁷²

EDF recommended the Commission require PG&E to expand its pilot so that customer data can be utilized to evaluate and improve on the rate’s design in a timely manner. EDF’s suggestion that the pilot should be extended beyond the proposed 50 customers was echoed by EnelX and SBUA, which requested an expansion of the pilot to accommodate up to 500 residential customers or specifically target additional small business customers, respectively.⁷³

PG&E said that to implement an optional day-ahead real-time pricing rate beyond the proposed 50 existing BEV customer cap, it would need to use its Customer Care Billing System, which may take additional time and result in

⁷¹ A.20-10-011 Evidentiary Hearing Transcript Volume 1 dated June 1, 2021; Testimony by PG&E Witness Sharon Pierson (at 21, lines 20-27).

⁷² Exhibit PG&E-1 at 1-24. PG&E notes that “it may not be possible to recruit a sufficient number of participants to conclude observed relationships are statistically significant. It is also uncertain whether the participating customers will be diverse enough to indicate customer understanding and benefits, particularly for customers in disadvantaged communities. In addition, it will also not be possible to generalize results to other customer classes.”

⁷³ Exhibit EnelX-2 at 4; Exhibit SBUA-1 at 21.

incremental project costs.⁷⁴ PG&E, however, already does not expect to implement and offer the proposed rate until 2023.⁷⁵

In rebuttal, PG&E also argued that expansion of its pilot to more than 500 drivers would increase costs, because of the incentives it proposed to offer pilot participants. As discussed in Section 4.1 above, we find PG&E's proposed individual driver incentives to be unnecessary for the optional rate being offered. Customers should be able to determine whether the optional rate adopted in this decision will provide cost-savings without any incremental incentive to individual drivers, particularly because the plurality of individual drivers utilizing sites on the BEV schedules currently are individual customers charging at DCFC sites that would be ineligible for such an incentive under PG&E's proposal.⁷⁶ Moreover, as provided in Section 4.3 above, PG&E should develop specific ME&O methods and materials that would apply to different customer types and in various languages to inform eligible customers about the potential cost-savings or operational improvements that could be available through enrollment in the day-ahead real-time rate. Further, we note D.19-10-055 found "it is important that [BEV] customers be given a variety of rates to choose from that help lower their costs" and directed PG&E to file an application for a dynamic rate option that would be generally applicable for the BEV customer class, not a limited pilot for only 50 sites.⁷⁷

PG&E argued that the limited pilot would be reasonable based on current BEV enrollment in testimony during evidentiary hearing and in its opening brief.

⁷⁴ Exhibit PG&E-1 at 3-17.

⁷⁵ Exhibit PG&E-3 at 3-2.

⁷⁶ PG&E Opening Brief at 23.

⁷⁷ D.19-10-055 at 29-30.

PG&E stated that as of April 2021, there were 43 account holders enrolled in its BEV rates, representing 320 single or multiple service agreements. PG&E further argued that it will partner with one electric service provider (ESP) and up to two CCAs in its service territory, and that its proposed pilot cap of 50 account holders will result in significantly more than 50 individual participating commercial EV drivers.⁷⁸

Although PG&E noted that “even if every single one of the currently-enrolled BEV account holders opted to join the [real-time pricing pilot], PG&E would still not be able to reach its proposed the participant cap,” we find its argument to cap the pilot to only 50 customers unsupported. It is unreasonable to offer a pilot rate at a proposed cost of up to \$6 million without the potential for gathering adequate data to evaluate the effectiveness of the real-time dynamic rate design and the enrolled customers’ responses to it. In addition, we expect that as more commercial customers adopt electric vehicles, the number of participants in the BEV rate will increase.

Therefore, because a pilot of 50 customers would not provide adequate data to evaluate the new rate design, and recognizing the limited number of customers that have already enrolled in PG&E’s BEV rates, we find it reasonable to direct PG&E to offer the day-ahead real-time pricing option proposed in A.20-10-011 to any customer that has already enrolled, or is eligible to enroll, in its Schedules BEV-1 and BEV-2. The cost recovery mechanism for this broader opt-in rate is discussed in Section 7 *infra*, and further discussion on the metrics, data collection, and evaluation efforts is provided in Section 8.

⁷⁸ PG&E Opening Brief at 21-22.

In terms of other modifications to PG&E's proposed DAH RTP rate, we decline to adopt EnelX's proposal to expand the optional dynamic real-time pricing rate adopted in this decision to residential customers, because the rate was specifically designed as a modifier to PG&E's existing BEV schedules for commercial customers, as directed in D.19-10-055. We agree with PG&E that the rate it designed and proposed in the instant proceeding was specifically intended to support the electrification of commercial customers' vehicles, and/or those deploying EV charging infrastructure at a commercial scale, such as workplaces or multi-unit dwellings and DCFC stations.⁷⁹ As previously noted, further consideration of real-time pricing options for other customer classes in PG&E's service territory is ongoing in the GRC II proceeding, A.19-11-019. A dynamic rate for all customers, including residential, was also proposed by the Commission's Energy Division staff in a May 25, 2021, workshop.

Regarding SBUA's recommendation that PG&E should enroll at least six small businesses – three in the workplace charging segment and three in the medium-duty fleet customer segment – we agree with PG&E that the current pool of customers enrolled on the BEV rate makes it difficult to meet that target.⁸⁰ As SBUA notes, however:

[S]mall businesses may lack staff with the time, authority, and expertise to take the lead on EV charging (or other workplace commuting issues, for that matter). On the other hand, a small business may be able to commit more quickly than a large corporation with multiple levels of review. The actual

⁷⁹ PG&E Opening Brief.

⁸⁰ *Ibid.* at 27-28.

differences between small and larger businesses should be considered.⁸¹

We agree. Therefore, PG&E should enroll no fewer than three small businesses in its DAHRTP rate within two years of offering the rate to eligible customers. PG&E's ME&O related to the day-ahead, hourly real-time rate shall include materials that specifically target small business customers that are eligible to enroll in the BEV rate across all customer segments. If, 24 months after the optional rate is made available, PG&E has not enrolled at least three small businesses in the DAHRTP, it shall file a Tier 2 Advice Letter explaining the barriers to enrolling small businesses in the dynamic rate.

In comments on the Proposed Decision, PG&E reiterated its earlier arguments that the budget proposed in A.20-10-011 would only support the enrollment of 50 customers and up to 2 community choice aggregator partners, and that the proposal to expand the rate to any eligible BEV customer would increase costs for implementation.⁸² Given there were only 43 customers enrolled in the BEV customer class as of April 2021 and that only two community choice aggregators were active parties in this proceeding, we find this argument unfounded. However, to facilitate the success of the DAHRTP implementation, we authorize PG&E to file a Tier 2 advice letter if, within 24 months of the issuance of this Decision, it has exhausted \$6 million (the high-cost forecast of its proposed DAHRTP pilot budget), it may seek authority to spend up to an additional \$3.6 million (the low-cost forecast of its proposed DAHRTP pilot) to accommodate additional customers seeking to enroll in the DAHRTP rate. This

⁸¹ SBUA-01 at 22.

⁸² Exhibit PG&E-1 at 3-17; Exhibit PG&E-4 at 4-2; PG&E Opening Comments on the Proposed Decision at 3-7.

incremental authorization includes the potential \$1.7 million increase to develop the customer enablement and rate comparison tools described in Section 4.2. The advice letter seeking incremental funding should, at a minimum:

1. Describe the customer enablement and rate comparison tools that have been developed, the budget expended to support those tools, and whether/how much incremental funding was authorized to finalize those tools;
2. Provide the number of customers that have opted-in to the DAHRTP and the average cost of enrolling each customer; and
3. Estimate the number of incremental customers the additional funding requested would support.

PG&E's request for incremental funding will be evaluated based on its adherence to the criteria defined above, the current DAHRTP enrollment level, as well as the results and data PG&E provides in its annual evaluations described in Section 8, *infra*.

6. Marginal Generation Capacity Cost Stipulation

In recent years, PG&E has used its generation PCAF method to develop generation for TOU rates and allocate MGCC among customer classes, based on Adjusted Net Load (ANL) above a set threshold. PG&E's typical MGCC allocation formula includes a hydro variable but reflects all weather year scenarios in the calculation of its PCAF denominator.⁸³

Cal Advocates argued that PG&E's proposed MGCC calculation methodology, which is based on a standard average of 10 forecasted weather year simulations, would create significant annual volatility in MGCC price signals. To avoid the potential for large annual over- or under-collections on the proposed optional rate, Cal Advocates proposed that PG&E should be directed

⁸³ Exhibit PG&E-20 at 2.

to use the observed CAISO hydro generation from January to April each year to set the forecast for the PCAF by May of each year. Further, Cal Advocates proposed that 13% of costs of MGCC hours should be assigned to the hours between 3:00 p.m. and 9:00 p.m. during which CAISO issues a day-ahead Flex Alert or other similar usage alert, and only to hours for which PG&E's PCAF-based capacity prices are below a set threshold. Cal Advocates also suggested that limits could be set on the minimum or maximum number of alert hours that could be called each year.⁸⁴

SBUA similarly suggested that MGCC should be allocated based on CAISO Flex Alerts, CAISO Restricted Maintenance Orders (RMOs), and an ANL/PCAF method that appropriately reflects hydro generation forecasts. SBUA, however, raised concerns about Cal Advocates' proposal intended to smooth cost recovery by limiting the Critical Peak Pricing (CPP) periods to six hours or fewer, and only to a total of 15-20 hours per year. Although SBUA agreed that any customer would likely struggle to maintain any significant load reduction for periods that drastically exceed a six-hour period, SBUA suggests that CAISO's RMO alerts "indicate a higher level of concern" related to specific grid reliability events.⁸⁵ SBUA suggested that PG&E's MGCC component of its proposed day-ahead real-time rate be comprised of (1) PG&E's ANL/PCAF method, potentially as modified by Cal Advocates to reflect hydrological conditions; (2) an hourly Flex Alert event price; and (3) an hourly RMO event price.

⁸⁴ Exhibit Cal Advocates-1 at 1-3.

⁸⁵ Exhibit SBUA-2 at 1-13.

On June 1, 2021, PG&E, Cal Advocates, and SBUA filed a joint stipulation regarding the development of a MGCC component for the optional dynamic real-time rate to be adopted in this proceeding.⁸⁶ The stipulating parties (PG&E, Cal Advocates, and SBUA) stated there is insufficient data to evaluate the differences between their three proposed MGCC allocation proposals. Further, the three parties agreed that it is reasonable to study whether one proposal or some combination of the three would best align this rate's MGCC allocation with the underlying capacity shortfall risk for the CAISO system.

The stipulating parties proposed to conduct a study to analyze variables that could affect the CAISO grid including:

1. Hydro-year conditions and the weighting of the hydro variable in the calculation of ANL;⁸⁷
2. SBUA's proposed inclusion of CAISO RMO;
3. Day-ahead CAISO Flex Alerts or other CAISO alerts, warnings, or emergency events;
4. The functional form of PCAF weighting above the PCAF threshold; and⁸⁸
5. Variations of Cal Advocates' reliability Capacity Peak Pricing (reliability CPP) or CAISO Alert-Based Adjustment proposal, as discussed in PG&E's rebuttal testimony.

⁸⁶ This stipulation was marked and admitted to the record as Exhibit PG&E-20. MGCC should reflect the generation system costs of serving an incremental unit of demand (kW) when system demand is highest relative to available generation capacity.

⁸⁷ See Exhibit PG&E-20 at 4. "PG&E's MEC model currently applies a 1.19 weighting factor to the hydro variable, based on a calibration using all hours from 2012 to 2019. However, PG&E believes that a weighting factor less than one may be more appropriate to model capacity risk, as hydro capacity is less dependent on annual inflow volume than is annual hydro energy."

⁸⁸ This refers to the shape of the PCAF risk curve above the PCAF threshold, such as whether the risk curve should increase linearly with increasing ANL or if it would more accurately match the underlying hourly capacity risk by using a non-linear function. The Stipulation states it is reliant on data from the Commission's Energy Division modeling team.

PG&E, Cal Advocates, and SBUA propose to use system-wide historical and/or forecasted hourly capacity shortfall metrics which the three parties claim are available from the Commission's Energy Division's Strategy Energy & Risk Valuation Model (SERVM). The three parties also aim to obtain more detailed information from CAISO related to its issuance of alerts, warnings, and emergency events, to better understand their frequency and impacts to the grid. The stipulating parties suggest the study will "determine the fit between alternative formulations of hourly MGCC, as described above or as developed during the study, and capacity shortfall (reliability) metrics."⁸⁹

According to the stipulating parties, this study should develop a more accurate MGCC price signal and help identify the inter- and intra-annual variations necessary to keep the proposed day-ahead real-time capacity pricing rate accurate. The parties further argued this study could contribute to other ongoing procedural efforts to develop broader real-time pricing rates for all of PG&E's customer classes.⁹⁰

Given the willingness of the parties and the availability of the data through the Commission Energy Division's SERVM database, we find this stipulation reasonable. As noted by EDF, "PG&E should provide a more transparent discussion of how energy-related marginal costs, capacity-related marginal costs, and various other costs together comprise something that could reasonably be

⁸⁹ See SBUA-01 at 11; PG&E-02 at 2-9; and PG&E-20 at 5.

⁹⁰ Real-time pricing issues were bifurcated from the bulk of issues raised in PG&E's GRC II proceeding A.19-11-019 in February 2021, and a revised Assigned Commissioner's Scoping Memo and Ruling establishing the schedule for evaluating real-time pricing issues for all of PG&E's customer classes was issued on August 25, 2021.

called a 'market energy price'.”⁹¹ This discussion and the development of a more clearly defined hourly MGCC could occur as part of this collaborative study.

Therefore, we decline to adopt the MGCC allocation proposed by PG&E in A.20-10-011 in this Decision, and instead establish a Phase 2 of this proceeding that will evaluate the study developed as a result of this stipulation.

The following schedule is adopted for the remainder of this proceeding:

Item	Deadline
PG&E/Cal Advocates/SBUA MGCC Study Filed and Served to A.20-10-011 Service List	January 18, 2022
PG&E-hosted Meet-and-Confer session on MGCC Study	January/February 2022
Direct Testimony due. PG&E shall include a meet-and-confer report in its Direct Testimony	February 21, 2022
Motions for Evidentiary Hearing related to MGCC issues	March 4, 2022
Rebuttal Testimony due	March 11, 2022
Evidentiary Hearing on MGCC issues (if necessary)	Late March/Early April 2022
Proposed Decision on Phase 2 of A.20-10-011	Q3 2022

All parties to this proceeding are encouraged to participate in the second phase, including evaluating and reviewing the MGCC study and providing testimony based on their individual analyses. We are granting time to allow for the stipulated study to be filed and served to the service list of this proceeding and accommodating the potential need for additional evidentiary hearing on the issues that may arise once the study's outcomes are evaluated by other parties.

⁹¹ Exhibit EDF-1 at 12.

However, to ensure PG&E can fully implement its DAHRTP rate for BEV customers in 2023 as proposed, we will not delay the second phase of this proceeding indefinitely. If the stipulated MGCC study cannot be completed by January 18, 2022, the assigned Commissioner and ALJ can choose to draft a Phase 2 Proposed Decision in this proceeding based on the existing evidentiary record.

In comments on the Proposed Decision, PG&E and Cal Advocates both advocated for consolidating the MGCC phase of this proceeding with the real-time pricing phase of PG&E's GRC II (A.19-11-019).⁹² We find this proposal to have merit, but it remains unclear whether the study PG&E, Cal Advocates, and SBUA are proposing to conduct will be completed in time to allow for consideration in either proceeding. Therefore, we decline to consolidate the two proceedings' real-time pricing phases at this time. The assigned Commissioner and the Administrative Law Judge may modify the schedule adopted above.

7. Cost Recovery

PG&E provided cost estimates for the activities it deemed necessary to implement the DAHRTP rate, beyond those discussed in Section 4 *supra*.

Rather than requesting any specific amount of cost recovery associated with its proposed pilot in this application, however, PG&E stated that it would track any costs associated with implementation in a new memorandum account. PG&E would then seek recovery of any costs associated with offering the proposed rate in a future application or GRC before the Commission. PG&E proposed to recover the costs of the DAHRTP pilot through its standard

⁹² Cal Advocates Opening Comments on the Proposed Decision at 5; PG&E Reply Comments on the Proposed Decision at 2.

distribution allocation, and estimated the cost of implementing its proposed pilot rate would be between \$3.6 million and \$6 million.⁹³ Issue 3 of the Scoping Memo requires an evaluation of the bill impacts faced not only by customers that enroll in the proposed DAHRTP rate, but also other commercial customers and residential customers that receive service from PG&E.

Cal Advocates in testimony argued that recovery of any incremental costs associated with the DAHRTP rate provided to BEV customers should only be recovered from pilot participants, and that the cost recovery should be allocated on an equal-cents per kilowatt hour (kWh) basis.⁹⁴ Cal Advocates also argued that PG&E's suggestion that the proposed pilot's limited scope would minimize any cost impacts to non-participating customers is unsupported, because the potential volatility in the price levels associated with PG&E's rate could result in potentially large under-collections from customers participating in the day-ahead real-time pricing rate.⁹⁵ The Proposed Decision directed PG&E to recover costs associated with the DAHRTP rate solely from customers in its BEV customer class.

Cal Advocates noted that the Commission, in several recent decisions, has approved an equal cents/kWh allocation on the basis that transportation electrification programs are primarily policy-focused and provide GHG reduction benefits that benefit all customers. "Most recently, in D.21-07-028, the

⁹³ A.20-10-011 at 4.

⁹⁴ Exhibit Cal Advocates-1 at 3-2 through 3-9.

⁹⁵ Cal Advocates Reply Brief at 6-7.

Commission adopted equal cents/kWh allocation for near-term priority [Transportation Electrification (TE)] investments by the electrical corporations.”⁹⁶

Electrify America recommended that recovery of the costs associated with this optional DAHRTP rate specifically designed for customers enrolled in or eligible to enroll in the BEV rate should be limited to customers in the BEV class established in D.19-10-055. Cal Advocates cautioned that non-participating BEV customers that may have been excluded from the 50-site pilot proposed by PG&E should not shoulder incremental costs associated with the optional rate.

In comments on the Proposed Decision, PG&E noted that based on its current BEV customer class service agreements, recovering even the bottom end of its forecasted DAHRTP implementation budget (\$3.6 million) from BEV customers only could result in a 12% increase in the average total bundled BEV rate. PG&E further noted that isolating cost recovery to only customers enrolled in the BEV rate could also result in a doubling of the subscription charge. PG&E also argued that its development of the customer enablement tool and an interface with the Energy Commission’s MIDAS system and other third-party platforms, and improved coordination with community choice aggregators will provide benefits for other customer classes that may transition to other real-time pricing rates as they become available.⁹⁷

In reply comments on the Proposed Decision, Cal Advocates agreed with PG&E that the Commission should permit PG&E to recover costs associated with the DAHRTP from all customer classes through distribution rates. However, both PG&E and Cal Advocates noted that D.19-10-055 limits the distribution rate

⁹⁶ Cal Advocates Reply Brief at 8. Cal Advocates also noted D.20-08-045 (at 118-121) and D.21-04-014 (at 75-77)

⁹⁷ PG&E Opening Comments on the Proposed Decision at 9.

for BEV customers to marginal costs only, which could make it impossible for BEV customers to share in cost recovery if a distribution allocation were adopted.⁹⁸ D.19-10-055 directed PG&E to collect only marginal distribution revenue from the BEV rate class, rather than distribution revenue that would have been collected pursuant to the application of the distribution equal percent marginal cost scaler.⁹⁹ This provision aimed to significantly reduce the subscription charges, ensure BEV customers were not inadvertently subsidizing other customer classes, and encourage enrollment in the new BEV customer class.

D.19-10-055 restricted the collection of non-marginal distribution costs from BEV customers in an effort to support Senate Bill 1000's (Stats. 2018, ch. 368) requirement that the Commission explore policies and rates that reduce the effects of demand charges on electric vehicle drivers and fleets.¹⁰⁰ We find the costs associated with the DAHRTP opt-in rate could be considered marginal, because although they may slightly increase BEV customers rates, the new DAHRTP rate offering could increase the number of customers that choose to enroll in the BEV customer class, which also aligns with the goals established in SB 1000. For clarity, we hereby exempt the costs authorized in this Decision from the restrictions adopted in Ordering Paragraph 14 of D.19-10-055. PG&E is permitted to recover costs associated with its DAHRTP rate through BEV customers' distribution rates, based on the current distribution cost allocation at the time PG&E seeks recovery of its DAHRTP implementation costs.

⁹⁸ *Ibid*; D.19-10-055 at 76 and Ordering Paragraph 14; Cal Advocates Reply Comments on the Proposed Decision at 1-2.

⁹⁹ D.19-10-055 at 44-46.

¹⁰⁰ Pub. Util. Code § 740.15(a)(2); D.19-10-055 at 46 and Conclusion of Law 30.

Further, we agree with PG&E that the tools and strategies it develops to implement the DAHRTP rate could improve and reduce the costs of implementing future real-time pricing rates for other customer classes in the future.¹⁰¹ Therefore, when PG&E requests recovery for the costs associated with implementing the optional DAHRTP rate, it shall use its standard distribution allocation factors to recover the authorized costs from all customer classes.

To track the costs associated with implementing the DAHRTP rate, PG&E is directed to create a new Dynamic and Real-Time Pricing Memorandum Account.¹⁰² If PG&E intends to use the same memorandum account to track and recover costs associated with any other real-time pricing rate it may be authorized in the future, it shall ensure that it separately tracks the DAHRTP costs within a specific subaccount.

8. Evaluation

PG&E's proposal for a pilot DAHRTP rate implied that the evaluation of customer participation and response to the rate's price signals would be wholly qualitative, due to the limited number of 50 potential customers.¹⁰³ PG&E proposed to collect data including, but not limited to: hourly rate, billing data, usage and demand from utility meters; hourly transformer loads; EVSE-level charge sessions; customer charging data; and weather.

Further, PG&E proposed to measure customer engagement by conducting customer satisfaction surveys and tracking information such as platform signal uptime; average and max latency of charging stations; errors per day; and endpoint utilization.

¹⁰¹ *Ibid.*

¹⁰² *Ibid* at 11 and Exhibit PG&E-1 at 1-27.

¹⁰³ Exhibit PG&E-1 at 3-2.

Finally, PG&E proposed to track and measure customer and grid benefits based on “industry recommended protocols.”¹⁰⁴

SBUA in opening testimony recommended PG&E develop a more comprehensive evaluation, measurement, and verification plan, because the proposed plan’s qualitative aspects are “fairly vague.” We agree with SBUA and Cal Advocates that PG&E has not clarified whether it intends to conduct the evaluation, measurement, and verification of this proposed rate internally or seek a third-party evaluation provider. We further agree with SBUA that a third-party evaluator could provide better experience evaluating dynamic rate offerings and provide insights that were gathered and informed by similar rates offered by other utilities in California, the United States, and abroad. We also agree with Cal Advocates, who noted that evaluation metrics and data reporting requirements could be developed during PG&E’s implementation of the rate.¹⁰⁵

To better understand the success of the DAHRTP rate and to inform the future design of dynamic and real-time rates, we direct PG&E to host a workshop no later than March 31, 2022, to develop an evaluation strategy that includes, at a minimum:

1. Metrics on the cost differences different customers experience on the day-ahead, real-time pricing rate authorized in this decision relative to PG&E’s existing BEV rate schedules;
2. The cost associated with upgrading customers’ EV charging infrastructure to automate the reception of and reaction to real-time pricing signals;

¹⁰⁴ Exhibit PG&E-1 at 3-8.

¹⁰⁵ Exhibit SBUA-1 at 27; Exhibit Cal Advocates-1 at 2-13 and 2-14.

3. The system benefits of more dynamically reactive loads conveyed through the real-time price deployed in this rate schedule, relative to PG&E's existing BEV rate schedules;
4. An evaluation of the impacts of any negative generation rates resulting from the TOU revenue-neutral adder described in Section 3.1 above;
5. An evaluation of the load response from customers enrolled on the DAHRTP rate relative to those enrolled in the BEV tariff and other demand response programs; and
6. An evaluation of the DAHRTP signals' overlap with other demand response programs, to determine the potential for double compensation if customers participate in both a dynamic rate and a demand response program.

No later than 45 days after the workshop, PG&E shall file a Tier 2 Advice Letter describing the workshop participants, key discussion points, and the list of evaluation metrics and data reporting it proposes to provide in annual reports 12-, 24-, and 36-months after it has fully implemented the optional DAHRTP rate. The annual reporting should be submitted to the Commission's Energy Division and the service list to this proceeding. To support this evaluation, we adopt PG&E's proposed evaluation budget of between \$125,000 to \$150,000, which it stated will cover "a range of measurement and verification activities including, but not limited to, framework design, customer research, and impact analysis."¹⁰⁶

9. Conclusion

This decision adopts PG&E's proposed day-ahead, hourly real-time rate design as an option for any customer enrolled, or eligible to enroll, in its existing BEV schedule. It directs PG&E to offer its DAHRTP to any customer that would be otherwise eligible to enroll in its BEV rate, rather than capping enrollment at

¹⁰⁶ Exhibit PG&E-1 at 3-10.

50 customers. It requires PG&E to track the costs of implementing the new optional rate in a new DAH RTP memorandum account for recovery from customers within its BEV customer class on an equal cents per kWh basis. It denies PG&E's request to offer monetary incentives to individual drivers but authorizes PG&E to spend up to \$1.295 million to support customers that require upgrades to their existing EV infrastructure to receive real-time pricing signals. It further authorizes PG&E to recover costs associated with ME&O; the development of a customer enablement tool that sends accurate pricing signals; and the data collection and evaluation of the optional DAH RTP rate for BEV customers over the next three years. Finally, this decision adopts a schedule for Phase 2 of this proceeding that will consider any new information regarding the MGCC applied to the DAH RTP if the study stipulated to by PG&E, Cal Advocates, and SBUA can be completed by January 15, 2022. This proceeding remains open.

10. Comments on Proposed Decision

The proposed decision of ALJ Carolyn Sisto in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on November 8, 2021 by PG&E, Cal Advocates, EnelX, Electrify America, the Joint CCAs, VGIC, and EDF, and reply comments were filed on November 15, 2021 by PG&E, Cal Advocates, SBUA, VGIC, the Joint CCAs, and EDF.

Changes to respond to parties' comments are made throughout this Decision. One issue raised by VGIC and EnelX related to export compensation for customers that do not participate in net energy metering but still provide behind-the-meter resources, is not addressed in this Decision. We find this issue

was not substantively addressed outside of EnelX and VGIC's briefs and VGIC's opening comments to the Proposed Decision but find it has merit for further consideration. It is not our intent to discourage near-term investments in vehicle-to-grid capable technologies, and this issue will be considered in the second phase of this proceeding.

Other parties raised issues that are not due for consideration, including the Joint CCA's proposal to develop a two-phased roll-out of the DAH RTP rate. We find the Joint CCA's proposal would create additional complexity when compared to the Proposed Decision's adoption of an opt-in rate available to any customer eligible to enroll in the BEV rate.

11. Assignment of Proceeding

Clifford Rechtschaffen is the assigned Commissioner and Carolyn M. Sisto is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. D.19-10-055 directed PG&E to propose a dynamic rate option for customers eligible to enroll in its BEV rate.
2. D.19-10-055 did not prohibit PG&E from proposing a rate that would specifically encourage EV customers to deploy battery storage.
3. PG&E proposed a limited pilot program that would offer a DAH RTP option to up to 50 customers and up to 500 individual EV drivers.
4. The BEV rate, and the optional DAH RTP rate, are designed to accelerate the electrification of the transportation sector as directed by state law.
5. PG&E's proposed MEC, which is comprised of the loss-adjusted day-ahead prices at PG&E's DLAPs, will provide more accurate marginal cost price signals than a traditional TOU rate, and may provide EV customers greater opportunity to reduce their fuel costs by charging when MEC are low.

6. The TOU-based revenue-neutral rate adders stipulated to in Exhibit PG&E-21 reflect PG&E's BEV Schedules' TOU periods.

7. D.19-10-055 directs PG&E to collect only marginal distribution revenue from the BEV class, primarily to substantially reduce the subscription charges in PG&E's BEV rates pursuant to SB 1000.

8. Full elimination of subscription charges for the DAHRTP rate could shift incremental distribution capacity costs associated with commercial EV charging onto other customers.

9. Offering incentives to customers that have already installed EV charging infrastructure to support technology upgrades necessary to accommodate real-time pricing signals is an appropriate use of ratepayer funding because it encourages customers to participate in a new rate design.

10. There are platforms and tools available from existing vendors and other third parties that PG&E can leverage to develop a customer enablement tool at a lower cost to ratepayers.

11. The CEC is developing rate information tools that can provide information about PG&E's DAHRTP rate to customers.

12. Offering ME&O assets for PG&E's DAHRTP rate in multiple formats and languages will help clearly explain the potential benefits of real-time pricing for each different customer segment that is eligible to enroll in its BEV schedule.

13. PG&E can better measure the load response of customers enrolled on the DAHRTP rate if customers are not also enrolled in other demand response programs.

14. Customers that participate in the CAISO's ancillary services market could participate in the DAHRTP rate without facing conflicting pricing signals.

15. Submetering is being considered in R.18-12-006. When submetering becomes an approved and accepted means of metering commercial EVSE load, a separate meter should no longer be required to take service on a BEV rate, including the DAH RTP rate adopted in this proceeding.

16. PG&E only had 43 customer sites enrolled on the BEV schedules as of April 2021.

17. PG&E proposed to spend up to \$6 million to implement a limited pilot of its DAH RTP rate.

18. Small business customers will face different challenges and opportunities when adopting the DAH RTP rate.

19. A limited pilot of 50 highly variable customers is unlikely to provide results that could be adequately evaluated to determine customer responsiveness, or the effectiveness of the real-time pricing rate design being implemented.

20. There is insufficient data to evaluate the differences between the three proposed MGCC allocation proposals provided by PG&E, Cal Advocates, and SBUA.

21. The study proposed in Exhibit PG&E-20 could develop a more accurate MGCC price signal and help identify the inter- and intra-annual variations necessary to keep the proposed day-ahead real-time capacity pricing rate accurate.

22. Only customers that are, or are eligible, to be in PG&E's BEV customer class can enroll in the DAH RTP rate adopted in this decision.

23. Transportation electrification programs designed to expand EV load have broader greenhouse gas reduction benefits than typical distribution system upgrades.

24. The Commission has previously adopted an equal cents/kWh cost allocation for IOUs' transportation electrification programs.

25. PG&E has historically recovered costs associated with its transportation electrification programs, billing system upgrades, and customer service platform development from all customers through its distribution allocation factors.

26. Recovering the full costs of the DAHRTP rate from BEV customers could significantly increase a rate that was specifically designed to provide a lower-cost option for customers transitioning to electrified vehicles.

27. PG&E's proposed evaluation strategy is not adequate to determine the efficacy of its DAHRTP rate offered to its BEV customer class.

Conclusions of Law

1. It is reasonable to require PG&E to offer its DAHRTP rate to all customers that have enrolled, or are eligible to enroll, in its existing BEV schedules.

2. It is reasonable for PG&E to implement an MEC based on CAISO's day-ahead pricing and average DLAP loss factor for the optional day-ahead real time rate adopted in this proceeding.

3. PG&E should implement the TOU-based revenue-neutral rate adders agreed upon in Exhibit PG&E-21 and evaluate their impacts when evaluating the DAHRTP rate.

4. It is reasonable for PG&E to maintain the subscription charges authorized in D.19-10-055 to implement the day-ahead, real-time pricing rate adopted in this decision.

5. PG&E should not offer incentives to individual drivers that participate in the DAHRTP rate.

6. It is reasonable for PG&E to offer one-time technology incentives to upgrade existing EV charging infrastructure to enable customers to receive dynamic pricing signals.

7. PG&E should leverage existing vendors and platforms to develop a customer enablement tool at a lower cost to ratepayers.

8. It is reasonable to require PG&E to provide information about its DAHRTP rate to the CEC for inclusion in the MIDAS database.

9. It is reasonable to require PG&E to develop a rate comparison tool that can provide customers an illustrative estimate of their electric costs on the DAHRTP, relative to their bills on otherwise-applicable tariffs.

10. PG&E should target no fewer than three small business customers to enroll in its DAHRTP rate within two years to evaluate the rate's impact on small businesses' EV charging profiles.

11. PG&E, Cal Advocates, and SBUA should complete the MGCC study proposed in Exhibit PG&E-20 and share the results for consideration in Phase 2 of this proceeding.

12. It is reasonable for PG&E to initially prohibit customers participating in its other demand response programs to enroll in its DAHRTP rate to allow for improved evaluation of the load response associated with the new rate design.

13. Participation in CAISO's ancillary services market should not disqualify customers from enrolling in the DAHRTP rate.

14. The tools developed to implement the DAHRTP rate could be used to support the implementation of additional real-time rates for other PG&E customers in the future.

15. PG&E should recover the costs of implementing its DAHRTP rate from all customers using the distribution allocation factors in effect at the time PG&E seeks cost recovery.

16. No later than March 31, 2022, PG&E should host a workshop to develop a more thorough and detailed evaluation plan to determine the efficacy of its DAHRTP rate offered to its BEV customer class and the associated load response associated with the new opt-in rate.

O R D E R

IT IS ORDERED that:

1. Pacific Gas and Electric Company is authorized to offer an optional, day-ahead, hourly real-time pricing rate to all customers that have enrolled, or are eligible to enroll, in its existing business electric vehicle schedules.
2. Pacific Gas and Electric Company shall develop a marginal energy cost based on California Independent System Operator's day-ahead pricing and average default load aggregation point loss factor for the optional day-ahead real time rate adopted in this proceeding.
3. Pacific Gas and Electric Company's (PG&E) day-ahead, hourly real-time pricing rate shall include the time-variable revenue-neutral rate adder based on the stipulation described in Section 3.2 above, as modified to reflect PG&E's revenue requirement at the time of implementation. PG&E shall update the revenue-neutral rate adder as necessary to reflect updated revenue requirements through an advice letter process.
4. Pacific Gas and Electric Company is authorized to spend up to \$1.295 million to offer technology incentives to support necessary electric vehicle infrastructure upgrades that will enable participating customers to receive dynamic price signals.

5. Pacific Gas and Electric Company is authorized to spend up to \$443,000 to develop marketing, education, and outreach (ME&O) materials that specifically target each customer segment eligible to enroll in its day-ahead, hourly real-time pricing rate, and create ME&O assets in multiple formats and languages and specific ME&O assets that target small businesses.

6. Pacific Gas and Electric Company is authorized to spend up to \$2.4 million to develop (1) a customer enablement tool that provides pricing signals to customers enrolled in the day-ahead real-time pricing (DAHRTP) rate approved in this Decision and (2) a rate comparison tool that provides an illustrative estimate of customer's bills on the DAHRTP rate relative to the customers' otherwise-applicable tariff(s). If the \$2.4 million is exhausted within 12 months of the issuance of this Decision and before the two tools are completed, PG&E may file a Tier 2 advice letter seeking authorization to recover up to an additional \$1.7 million to finish the tools.

7. Pacific Gas and Electric Company (PG&E) shall enroll no fewer than three (3) small businesses in its optional day-ahead, hourly, real-time pricing (DAHRTP) rate within 24 months of offering the rate to business electric vehicle customers. If, within two years of offering its optional DAHRTP rate, fewer than three small businesses have been enrolled, PG&E shall file a Tier 2 Advice Letter describing the barriers that have prevented small business customer enrollment.

8. Pacific Gas and Electric Company shall provide any necessary incremental information to the California Energy Commission to ensure this new rate is reflected in the Market Informed Demand Automation Server database.

9. No later than January 18, 2022, Pacific Gas and Electric Company, the Public Advocates Office at the California Public Utilities Commission, and the

Small Business Utility Advocates shall file and serve the results of the marginal generation capacity cost study described in Section 6 above.

10. The schedule for Phase 2 of this proceeding as set forth in Section 6 above is adopted.

11. Pacific Gas and Electric Company (PG&E) shall recover the costs of its day-ahead, hourly real-time pricing rate from all customers using the authorized distribution allocation factors in effect when PG&E seeks cost recovery.

12. Within 30 days of this issuance of this Decision, Pacific Gas and Electric Company shall file a Tier 1 advice letter creating a Dynamic and Real-Time Pricing Memorandum Account that includes a subaccount to specifically track costs associated with implementing the day-ahead, real-time hourly pricing (DAHRTP) rate authorized in this Decision for commercial electric vehicle customers. PG&E is authorized to recover up to \$6 million to implement its optional DAHRTP rate. If, 24 months after the issuance of this Decision, the \$6 million budget cannot support additional customer enrollment in the DAHRTP rate, PG&E may file a Tier 2 advice letter seeking authorization to recover up to an additional \$3.6 million to continue enrolling and evaluating customers' responses to the DAHRTP rate.

13. No later than March 31, 2022, Pacific Gas and Electric Company (PG&E) shall host a workshop to develop a more detailed evaluation strategy. PG&E shall file a Tier 2 advice letter within 45 days following the workshop describing its detailed evaluation strategy and shall provide annual reports of the implementation of its day-ahead, hourly real-time rate for the first three years of the optional rate's availability.

14. Application 20-10-011 remains open.

This order is effective today.

Dated November 18, 2021, at San Francisco, California.

MARYBEL BATJER

President

MARTHA GUZMAN ACEVES

CLIFFORD RECHTSCHAFFEN

GENEVIEVE SHIROMA

DARCIE HOUCK

Commissioners

Appendix A

Abbreviations and Acronyms

APPENDIX A
Abbreviations, Acronyms, and Definitions

A.	Application
ALJ	Administrative Law Judge
ANL	Adjusted Net Load
BEV	Business Electric Vehicle
CAISO	California Independent System Operator
Cal Advocates	Public Advocates Office of Public Utilities Commission
CCAs	Community Choice Aggregators
CEC	California Energy Commission
CEV	Commercial Electric Vehicle
CPP	Capacity Peak Pricing
D.	Decision
DAH RTP	Day-Ahead, Hourly Real-Time Pricing
DCFC	Direct Current Fast Charging
DLAP	Default Load Aggregation Point
DRAM	Demand Response Auction Mechanism
EDF	Environmental Defense Fund
EnelX	Enel X North America, Inc.
EV	Electric Vehicle
EVSE	Electric Vehicle Service Equipment
GHG	Greenhouse gas
GRC	General Rate Case
Joint CCAs	Joint Community Choice Aggregators (East Bay Community Energy and Peninsula Clean Energy)

kW	Kilowatt
kWh	Kilowatt-hour
ME&O	Marketing, Education, and Outreach
MEC	Marginal Energy Cost
MGCC	Marginal generation capacity costs
MIDAS	Market Informed Demand Automation Server
MW	Megawatt
OP	Ordering Paragraph
PCAF	peak capacity allocation factor
PG&E	Pacific Gas and Electric Company
PHC	Prehearing Conference
R.	Rulemaking
RMOs	Restricted Maintenance Orders
RTP	Real-Time Pricing
SBUA	Small Business Utility Advocates
SERVM	Strategy Energy & Risk Valuation Model
TE	Transportation Electrification
TOU	Time-of-Use

(END OF APPENDIX A)