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Decision 19-10-038 October 24, 2019

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric
Company for Authority, Among
Other Things, to Increase Rates and
Charges for Electric and Gas Service
Effective on January 1, 2017 (U39M).

Application 15-09-001

**DECISION REGARDING COMPLIANCE MATTER IN PHASE 1 OF THE 2017
PACIFIC GAS AND ELECTRIC COMPANY GENERAL RATE CASE**

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DECISION REGARDING COMPLIANCE MATTER IN PHASE 1 OF THE 2017 PACIFIC GAS AND ELECTRIC COMPANY GENERAL RATE CASE

Summary

This decision resolves an issue left open by the primary decision resolving this Application, Decision (D.) 17-05-013. Pursuant to Ordering Paragraph 20 of that decision, Pacific Gas and Electric Company (PG&E) submitted updated calculations regarding the cost-effectiveness of its SmartMeter Update program on July 10, 2017. This decision reviews that submittal and finds it to be in compliance with D.17-05-013. PG&E shall submit further updates in each of its future General Rate Case proceedings.

Application 15-09-001 remains open to address a Petition for Modification of D.19-02-019.

1. Procedural Background

In Application (A.) 15-09-001 Pacific Gas and Electric Company (PG&E) submitted its 2017 General Rate Case (GRC) to the Commission, seeking authority to increase rates effective January 1, 2017. In Decision (D.) 17-05-013, the Commission adopted 2017 test year and 2018-2019 attrition year revenue requirements for PG&E. The Commission reached these results by approving a settlement agreement between active parties that resolved most issues in the proceeding.

In the same decision, the Commission reviewed a compliance item placed on PG&E by D.15-07-008. In D.15-07-008, the Commission dismissed (at PG&E's request) the application PG&E filed in 2010 for authority to establish a "peak-time rebate" (PTR) program. The 2010 application, in turn, was filed by PG&E in compliance with the Commission's 2009 decision authorizing PG&E to increase its revenue requirement to recover the costs of installing a SmartMeter upgrade (SMU) of its Advanced Metering Infrastructure (AMI), which the

Commission first authorized in 2006. The benefits expected from the PTR program were a significant reason the Commission found the SMU to be cost-effective in 2009. Thus, while the Commission did subsequently grant PG&E's request that it be released from the obligation to implement the PTR program, the Commission also directed PG&E to prepare an updated analysis of the cost-effectiveness of the SMU project without the previously-anticipated benefits of PTR. The Commission ordered PG&E to submit that analysis as part of its evidentiary showing in its 2017 GRC, the instant application.¹ The Commission explained the basis for this order by noting its responsibility to ensure that PG&E's SmartMeter program is cost-effective and stating that PG&E's ratepayers must be assured that the upgrade was a worthwhile investment of ratepayer funds.²

As directed in D.15-07-008, PG&E served an exhibit in the instant proceeding on December 1, 2015 entitled "SmartMeter Cost Effectiveness Update in Compliance with Ordering Paragraph 5 of California Public Utilities Commission Decision No. 15-07-008" (Exhibit PG&E-16). As explained in D.17-05-013, the analysis provided in Exhibit PG&E-16 was examined during evidentiary hearings conducted on September 1, 2016. During the testimony of PG&E's witness it became apparent that PG&E had not complied with the direction of Ordering Paragraph 5 of D.15-07-008, so at the conclusion of hearings, PG&E committed to providing an additional late-filed exhibit with calculations of the incremental SMU costs that would be in compliance with

¹ Ordering Paragraph 5 in D.15-07-008 in A.10-02-048, *Application of Pacific Gas and Electric Company for Approval of its 2010 Rate Design Window Proposal for 2-Part Peak Time Rebate and Recovery of Incremental Expenditures Required for Implementation*.

² *Id.*, at 17.

D.15-07-008. On October 17, 2016 PG&E served Exhibit PG&E-45, “Late Filed Exhibit on SmartMeter Upgrade Cost Effectiveness Update.”

The Commission addressed PG&E’s calculations in D.17-05-013 and concluded “[u]nfortunately, just as it did in preparing Exhibit PG&E-16, PG&E has again selectively updated certain values in its cost-benefit analysis in a manner that appears intended to preserve a cost-effective outcome for the SMU program by providing updated information when it favors that outcome, while failing to update information that could, presumably, tip the calculation into the negative.”³ Therefore, the Commission determined that this proceeding would remain open so that PG&E could complete this compliance item. The Commission directed PG&E to prepare a new update of its cost-effectiveness analysis by following detailed instructions provided in Section 5 of D.17-05-013.⁴ Finally, the Commission stated that the assigned Commissioner and assigned Administrative Law Judge would determine further procedural steps upon receipt of PG&E’s updated analysis.⁵

PG&E subsequently submitted its “SmartMeter Cost Effectiveness Update in Compliance with Ordering Paragraph 20 of California Public Utilities Commission Decision No. 17-05-013” on July 10, 2017. That document is marked as Exhibit PG&E-47 and admitted into the evidentiary record in this proceeding.

2. Exhibit PG&E-47

We begin our review of PG&E’s updated cost-effectiveness calculations by providing additional context regarding our original expectations for the

³ D.17-05-013 at 209.

⁴ *Id.*, Ordering Paragraph 20.

⁵ *Ibid.*

upgrade.⁶ The Commission first authorized PG&E to deploy an advanced metering infrastructure (AMI) project in D.06-07-027. PG&E's AMI project was intended to automate PG&E's gas and electric metering and communications network (5.1 million electric meters and 4.2 million gas meters) by retrofitting PG&E's existing analog meter inventory with new communications modules. In 2007, PG&E brought a new request to the Commission, its SMU program.⁷ PG&E sought authority to make significant additional investments in its original AMI project in order to upgrade the existing electric meters to solid state meters (i.e., to entirely replace the older meters with new meters). According to PG&E, the SMU would "create a foundation for building an infrastructure that will enable and empower new ways of looking at energy use."⁸

In general, the Commission reviewed the AMI and "smart meter" applications filed during this time period by comparing the projected costs of these investments to their projected benefits; the Commission required that an overall net benefit be demonstrated before authorizing the utilities to proceed with these capital-intensive projects. With respect to PG&E's 2007 SMU application, the Commission (consistent with the views of PG&E and the other parties in the proceeding) applied an "incremental" analysis to its evaluation of PG&E's request, meaning that the Commission did not consider whether the

⁶ This material is excerpted from a longer discussion in D.17-05-013.

⁷ A.07-12-009, "Application of Pacific Gas and Electric Company for Authority to Increase Revenue Requirements to Recover the Costs to Upgrade its SmartMeter™ Program."

⁸ D.09-03-026 at 5. To summarize briefly, in A.07-12-009 PG&E proposed to significantly upgrade certain elements of its SmartMeter Program technology: incorporating an integrated load limiting connect/disconnect switch into all advanced electric meters; incorporating a "home area network" (HAN) gateway device into advanced electric meters to support in-home network applications; and upgrading PG&E's electric meters to solid-state meters to support this functionality and to facilitate upgrades.

total project benefits (i.e., AMI plus SMU) exceeded total project costs. Instead, the Commission based its decision only on the incremental costs and benefits of the SMU program.

The Commission found that the incremental benefits of the SMU project did exceed the incremental costs, and authorized PG&E to proceed with its proposed investments. In reaching its decision, the Commission reviewed PG&E's forecasted incremental costs and benefits, as well as the arguments of other parties in favor of alternative forecasts. Ultimately, the Commission adopted its own estimates and relied on those to approve PG&E's request.⁹

2.1. Original SMU Project Costs and Benefits

The Commission found the total incremental costs of the SMU to be \$749 million on a "present value revenue requirement" (PVRR) basis.¹⁰ The bulk of these costs, 85%, consisted of deployment costs (e.g., the meter devices themselves). An additional 8% of costs consisted of ongoing operation and maintenance costs and "technology assessment" to provide for things such as feasible system upgrades, customer technology upgrades, and technical standards development. Finally, the Commission included "risk-based allowances" in the project costs, totaling approximately 7% of the total project costs.

⁹ D.09-03-026, Ordering Paragraph 1.

¹⁰ D.09-03-026 at 152, Table 3. The calculations in the remainder of this paragraph are derived from that table. PG&E's AMI and SMU are multi-year investment projects. As such, they are evaluated on a PVRR basis. The PVRR of a project is defined as the total annual revenue, discounted to present dollars at the time of the calculation, that is necessary to cover costs and expenses of the project over the multi-year project period (15 years for AMI and 20 years for SMU).

With respect to SMU project benefits, the Commission found the total incremental benefits of the SMU to be \$779 million.¹¹ These benefits fell into two broad categories. First, operational benefits such as avoided field visits due to the remote connect/disconnect switches that would be built into the new meters, and related cash flow and bad debt improvements made up 21% of the total. Second, benefits related to energy conservation and demand response accounted for 79% of the total. These benefits consisted of: (1) electric conservation facilitated by new HAN devices that would rely on information provided by the new SmartMeters (\$269 million, or 34% of total benefits); (2) air conditioning cycling facilitated by the new HAN devices (\$83 million, or 11% of total benefits); and, (3) the benefits expected from creation of the new PTR program (\$263 million, or 34% of total benefits).

As noted above, the Commission faulted PG&E's first and second attempts to update these calculations because PG&E appeared to have selectively updated some of its assumptions, but not others. Thus, PG&E begins its presentation of its third attempt in Exhibit PG&E-47 by explaining that it was prepared as directed by the Commission in Section 5 of D.17-05-013, where we stated:

By "fully update" we mean that PG&E should provide revised values for every line item in the original tables, with full support in workpapers for each revised value. If a line item is added to either table, PG&E shall provide full workpapers for that as well. As part of the analysis, PG&E shall provide a narrative document that explains and justifies the revisions to each line item, or the reason for leaving a line item unchanged, or the reason for adding a line item.

¹¹ *Id.* at 153, Table 4. The calculations in the remainder of this paragraph are derived from that table.

PG&E states that it used (then-current) cost and benefit information to update the values included in Exhibit PG&E-47. PG&E's updated analysis resulted in total SMU program costs equal to \$575.7 million, and total SMU program benefits equal to \$297.0 million.¹² Thus, incremental SMU costs exceed incremental SMU benefits by approximately \$278.8 million. PG&E's analysis is summarized in the table below:

**Comparison of Original and Updated Estimates
of Incremental Costs and Benefits of SMU Program**
(PVRR, \$ millions)

Item	Original (SMU Decision, D.09-03-026)	Updated (Exhibit PG&E-47)	Increase (Decrease)
<u>Incremental Costs</u>			
Deployment Costs	683,186	549,498	(133,688)
Operations and Maintenance Costs	43,389	15,432	(27,957)
Other Costs	22,440	10,803	(11,637)
Total Incremental Costs	749,015	575,734	(173,281)
<u>Incremental Benefits</u>			
Operational Benefits	164,431	112,872	(51,559)
Energy Conservation and Demand Response Benefits	615,190	184,078	(431,112)
Total Incremental Benefits	779,621	296,951	(482,670)
Total Benefits minus Total Costs	30,606	(278,783)	

PG&E also states its belief that “there are other incremental future potential benefits from SMU technology, primarily related to Electric Program Investment Charge and Smart Grid programs and other pilots, which are not yet quantifiable.”¹³ PG&E did not attempt to quantify these future potential benefits in Exhibit PG&E-47 but “reiterate[s] its belief that they are an important aspect of

¹² *Id.*, at 2-3.

¹³ Exhibit PG&E-47 at 2.

evaluating the cost effectiveness of the SMU technology in addition to the costs and benefits that are capable of quantification” and shown in the tables in Exhibit PG&E-47.¹⁴

2.2. Updated SMU Program Costs

As noted above, PG&E’s updated estimate of the costs of the SMU program totaled \$575.7 million, which is \$173.281 million lower than PG&E’s original estimate of \$749.0 million. PG&E explains that the primary drivers for the decline in costs are:

- (1) a reduction in the actual and forecast number of meters to be installed;
- (2) unanticipated tax rules providing accelerated depreciation on capital costs; and
- (3) removal of (a) operations and maintenance costs associated with the HAN, and (b) program costs regarding compliance with anticipated “Title 24” building standards for air conditioning cycling via programmable communicating thermostats.

These cost reductions were offset somewhat by the higher forecast cost of customer support for Time-of-Use (TOU) programs, compared to the PTR program that the Commission eliminated at PG&E’s request in D.15-07-008.

2.3. Updated SMU Program Benefits

As noted above, PG&E’s updated estimate of the benefits of the SMU program totaled \$297.0 million, which is \$482.67 million lower than PG&E’s original estimate of \$779.6 million. PG&E explains that the primary reasons for the lower benefits are:

¹⁴ *Ibid.* Similarly, in Exhibit PG&E-16 PG&E provides a lengthy discussion of “incremental future potential benefits.” See, Exhibit PG&E-16 at 10-13.

- (1) an overall reduction in the actual and forecast number of meters to be installed and the related reduction in benefits in the operation of remote connect/disconnect switches;
- (2) removal of the conservation benefits from the HAN and the related loss of benefits from Title 24 air conditioning cycling; and
- (3) removal of benefits associated with PTR, and replacement with lower benefits associated with TOU programs; the TOU benefits were not anticipated when PG&E filed its SMU application.

3. Discussion

While the headline numbers in Exhibit PG&E-47 show a notable gap between currently estimated costs and benefits of the SMU, we reiterate that we are less concerned with this snapshot in time, and more focused on the realization of future potential benefits from SMU technology. In D.17-05-013 we reiterated that the purpose of requiring PG&E to update its calculations was to establish a firm picture of the program as-implemented, not to fault PG&E: “[i]n D.09-03-026, we rejected recommendations to hold PG&E accountable for the benefits that it estimated in its application (as subsequently modified by the Commission), denying a request by The Utility Reform Network to penalize PG&E if it failed to achieve forecasted demand response benefits from both the original PG&E AMI decision and the SMU decision.”¹⁵ At the time we issued D.09-03-026, it was important that we not rely on “forecasted potential” benefits in order to conclude that the program would be cost-effective because that would not instill confidence in the merits of the program. Today, the shortfall reflects the benefits foregone due to: (1) our decision to grant PG&E’s request to cancel the rollout of its PTR program; and, (2) our acceptance of PG&E’s decision not to

¹⁵ D.17-05-013 at 213.

enable the HAN-related technology. In D.17-05-013 we noted that PG&E had neglected to update the benefits expected from the HAN, even though in 2013 the Commission had already approved PG&E's revised "SmartMeter Home Area Network Implementation Plan," which significantly reduced the scale of PG&E's HAN implementation. Sure enough, in Exhibit PG&E-47 the HAN-related benefits are reduced from \$269 million in Exhibit PG&E-16, to zero. PG&E explains

In the SMU application, PG&E included benefits associated with connection of IHD [in-home display] devices developed by third-party vendors to PG&E's HAN. As described above, that market has not developed as anticipated, and at this time, customer devices connected to the PG&E HAN are minimal. PG&E has removed electric conservation benefits associated with supporting HAN devices.¹⁶

Together, the PTR benefit and the HAN-related benefits assumed by the Commission in D.09-03-026 totaled \$615 million, almost 80% of the total forecast SMU benefits. We nevertheless granted PG&E's requests to terminate PTR and we approved PG&E's essential abandonment of the HAN, so the purpose of directing PG&E to update its original analysis is to re-set our framework for monitoring the program, not to demonstrate whether or not the program is estimated to be cost-effective at any specific point in time.

In other words, our approval of PG&E's SmartMeter Upgrade in D.09-03-026 relied on assumptions that were reasonable at that time, but we should recognize when the actually realized benefits are different. In doing so, it remains our responsibility to demonstrate to PG&E's ratepayers that the SMU was a worthwhile investment of ratepayer funds. For example, the PVRR

¹⁶ Exhibit PG&E-47 at 9.

analysis relied upon projections over a 20-year period (2010-2030) and we cannot rule out the possibility that a material portion of the “incremental future potential” benefits described by PG&E will, in fact, be realized.

Exhibit PG&E-47 is the thorough and complete update we directed PG&E to prepare, and we therefore find and conclude that PG&E has complied with Ordering Paragraph 20 of D.17-05-013. With this updated analysis, we now have a solid foundation for ongoing monitoring of PG&E’s progress toward a renewed demonstration of cost-effectiveness for the SMU program. We do not dispute PG&E’s contention that “there are other incremental future potential benefits from SMU technology, primarily related to Electric Program Investment Charge and Smart Grid programs and other pilots, which are not yet quantifiable”¹⁷ nor do we fault PG&E for its belief that they are “an important aspect of evaluating the cost effectiveness of the SMU technology in addition to the costs and benefits that are capable of quantification.”¹⁸ However, in light of our difficulty in obtaining a fully updated analysis from PG&E, in this decision we require PG&E to submit an updated version of Exhibit PG&E-47 as a stand-alone exhibit in each GRC application (Phase 1) that it files after the effective date of this decision. In doing so, PG&E shall not alter the format or the level of detail of Exhibit PG&E-47, unless it is to add detail. The assigned Commissioner in PG&E’s current GRC proceeding (A.18-12-009) should determine whether or not PG&E should be required to submit an updated version of Exhibit PG&E-47 for review in that proceeding.

¹⁷ Exhibit PG&E-47 at 2.

¹⁸ *Ibid.*

4. Comments on Proposed Decision

The proposed decision of Administrative Law Judge Stephen C. Roscow 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 October 7, 2019 by The Utility Reform Network (TURN). Reply comments were filed on October 14, 2019 by PG&E. Pursuant to Rule 14.3(c), comments shall focus on factual, legal or technical errors in the proposed decision and in citing such errors shall make specific references to the record or applicable law. Comments which fail to do so will be accorded no weight. Comments proposing specific changes to the proposed or alternate decision shall include supporting findings of fact and conclusions of law. Pursuant to Rule 14.3 (d), replies to comments shall be limited to identifying misrepresentations of law, fact or condition of the record contained in the comments of other parties.

TURN supports the PD, but recommends it be revised to reduce the likelihood of future instances akin to the matter reviewed in this decision:

- Require similar updates on the actual costs and benefits of other “smart grid” investments;
- Require utilities to provide discussion regarding the strengths and weaknesses of assumptions made in calculating the benefits and costs of smart grid investments, especially when deploying nascent technologies; and
- Require utilities to do sensitivity analyses based on the potential for changes in key assumptions.¹⁹

PG&E responds to TURN in its reply comments, contending that TURN's suggested modifications do not meet the requirements of Rule 14.3 by focusing

¹⁹ TURN comments on the PD at 5-6.

on factual, legal or technical errors in the PD itself.²⁰ PG&E also contends that the modifications requested by TURN are unnecessary because utilities already have the burden of showing that any requested investments, including “smart grid” investments, are just and reasonable.²¹

We agree with PG&E. First, regarding the requirements of Rule 14.3, TURN has not identified any errors in the PD. Second, the additional requirements TURN recommends are already standard practice in the Commission’s review of investments proposed by the utilities subject to our jurisdiction. Indeed, the two proceedings that reviewed PG&E’s original AMI project and the subsequent SMU project each included detailed review of PG&E’s assumptions by parties, which served as the basis of D.06-07-027 and D.09-03-026.

Based on the above, we have made no modifications to the PD.

5. Assignment of Proceeding

Marybel Batjer is the assigned Commissioner and Stephen C. Roscow is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. Exhibit PG&E-47 is a thorough and complete update of the cost-effectiveness of PG&E’s SMU.
2. “Present value revenue requirement” is the total annual revenue, discounted to present dollars at the time of the calculation, that is necessary to cover costs and expenses of a multi-year project.

²⁰ PG&E reply comments on the PD at 2.

²¹ *Id.*, at 3.

3. In Exhibit PG&E-47, PG&E updates the cost of the SMU (on a PVRR basis) to be \$575.7 million, which is \$173.281 million lower than PG&E's original estimate of \$749.0 million.

4. In Exhibit PG&E-47, PG&E updates the benefits of the SMU (on a PVRR basis) to be \$297.0 million, which is \$482.67 million lower than PG&E's original estimate of \$779.6 million.

5. In Exhibit PG&E-47, the final cost of the SMU exceeds the currently projected benefits.

6. The PVRR analysis in Exhibit PG&E-47 relies upon projections over a 20-year period, 2010-2030.

7. PG&E contends that there are other incremental future potential benefits from SMU technology, primarily related to Electric Program Investment Charge and Smart Grid programs and other pilots, which are not yet quantifiable.

8. In addition to the costs and benefits that can be quantified today, incremental future potential benefits are an important aspect of evaluating the cost effectiveness of PG&E's SMU technology.

Conclusions of Law

1. Exhibit PG&E-47 complies with Ordering Paragraph 20 of D.17-05-013.

2. PG&E should submit an updated version of Exhibit PG&E-47, entitled "SmartMeter Cost Effectiveness Update," as a stand-alone exhibit in each GRC Phase 1 application that it files after the effective date of this decision. In doing so, PG&E should not alter the format or the level of detail of Exhibit PG&E-47, unless it is to add detail.

3. The assigned Commissioner in PG&E's current GRC proceeding (A.18-12-009) should determine whether or not PG&E should be required to

submit an updated version of its “SmartMeter Cost Effectiveness Update” for review in that proceeding.

O R D E R

IT IS ORDERED that:

1. Pacific Gas and Electric Company (PG&E) shall submit an updated version of its “SmartMeter Cost Effectiveness Update” as a stand-alone exhibit in each General Rate Case Phase 1 application that it files after the effective date of this decision. In doing so, PG&E shall not alter the format or the level of detail used in Exhibit PG&E-47 in the instant proceeding, unless it is to add detail.
2. Application 15-09-001 remains open to consider the Petition for Modification of Decision 19-02-019.

This order is effective today.

Dated October 24, 2019, at Redding, California.

MARYBEL BATJER
President
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
GENEVIEVE SHIROMA
Commissioners