

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

In the Matter of the Application of Pacific
Gas and Electric Company (U39E) for
Approval of its Electric Vehicle
Infrastructure and Education Program

Application No. 15-02-009
(Filed February 9, 2015)

**OPENING BRIEF OF THE UTILITY REFORM NETWORK REGARDING
THE PG&E ELECTRIC VEHICLE INFRASTRUCTURE AND
EDUCATION PROGRAM**



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**OPENING BRIEF OF THE UTILITY REFORM NETWORK REGARDING
THE PG&E ELECTRIC VEHICLE INFRASTRUCTURE AND
EDUCATION PROGRAM**

I. INTRODUCTION, BACKGROUND AND PROCEDURAL HISTORY

Pursuant to Rule 13.11 of the Commission’s Rules of Practice and Procedure and the Schedule set by the Administrative Law Judge on the last day of hearings, April 28, 2016, the Utility Reform Network (“TURN”) hereby submits its Opening Brief on Pacific Gas and Electric Company’s (“PG&E”) Application for its Electric Vehicle Infrastructure and Education Program (“EV infrastructure program” or “proposed program”), including both the “compliant” and “enhanced” proposals¹ and on the non-unanimous Settlement Agreement (hereinafter “Settlement Agreement or Settlement”) concerning PG&E’s Program.² TURN and the other consumer advocates involved in this proceeding, the Office of Ratepayer Advocates (“ORA”), the Joint Minority Parties (“JMP”) and the Consumer Federation of California are not parties to the settlement.

The Settlement Agreement makes minor modifications to the enhanced proposal. The modifications do nothing to remedy the fact that the proposed program will be unduly burdensome to ratepayers because the ratepayer benefits of the proposed program do not outweigh the program costs. The Commission should reject PG&E’s “enhanced” proposal and the Settlement as submitted. The Settlement is not reasonable or in the public interest, because it places the entire risk of a \$160 million-dollar investment on PG&E ratepayers, while the majority of the benefits go to the electric vehicle (“EV”) drivers or the owners of the properties that get EV charging equipment at little to no cost. Further, as was addressed in TURN’s Comments on the Proposed Settlement and the Joint Response of the Non-Settling Parties to the

¹ See Exh. PG&E-03. The compliant proposal refers to PG&E’s proposal to build 2,510 charging stations at a cost of \$87.4M. The enhanced proposal refers to PG&E’s proposal to build 7,530 charging stations at a cost of \$222M.

² TURN addresses both PG&E’s Compliant and Enhanced proposals and the Settlement Agreement.

Motion for Adoption of the Settlement Agreement, the Settlement fails to address major issues raised by TURN and many other active parties in this proceeding.³

TURN supports the goal of promoting greater adoption of plug-in EVs in California, but does not believe that ratepayers should bear the entire risk of large-scale investments in a nascent market. The program adopted by the Settlement Agreement does not have any of the traditional characteristics of a pilot (limited size and scope, phasing/opportunity to make adjustments to the program as assumptions are tested, clear metrics to evaluate the program after the data has been collected, etc.). The Settlement Agreement program skips the initial limited pilot phase and proposes a large-scale deployment based on risky assumptions and uncertainty.

The Commission should reject the Settlement and instead adopt a limited pilot phase with the size and scope of the compliant proposal. The Commission should also adopt TURN's proposed modifications to the compliant proposal detailed in Section III.A.2 below.

II. LEGAL AND PROCEDURAL ISSUES

A. Legal Issues Related to the Enhanced Proposal

PG&E's enhanced proposal, which is approximately the same size as the proposed settlement, directly contradicts a Commission directive and should be rejected. In Application 15-02-009 and the original testimony, filed February 9, 2015, PG&E proposed to deploy, own and maintain 25,100 EV charging stations. At the June 12, 2015 prehearing conference parties were asked to consider formal phasing of PG&E's proposed program and on June 16, 2015 the ALJs issued a ruling requesting comments on more formally phasing PG&E's program.⁴ Pursuant to this ruling, parties filed comments and reply comments in early July.⁵

On September 4, 2015, Assigned Commissioner Carla Peterman and Administrative Law Judges ("ALJs") Darwin Farrar and Karin Hieta issued a Joint Assigned Commissioner and

³ See Comments Of The Utility Reform Network On The Proposed Charge Smart And Save Program Settlement Agreement, April 12, 2016, pp. 2-3; & Response Of The Office Of Ratepayer Advocates, The Utility Reform Network, Electric Vehicle Charging Association, TechNet, ChargePoint, Joint Minority Parties And Vote Solar To The Motion For Adoption Of Settlement Agreement, April 1, 2016, pp. 9-11.

⁴ *Id.* at p. 2.

⁵ *Id.*

Administrative Law Judges’ Scoping Memo and Ruling (“Scoping Memo”). The Scoping Memo states that the Commission will not consider PG&E’s EV Program as proposed because:

“it does not allow for adequate review and evaluation to determine whether its costs are just and reasonable, whether it results in ratepayer benefits, and whether potential anticompetitive impacts are adequately prevented and/or mitigated.”⁶

The Scoping Memo then summarizes the parties’ comments on phasing and the Commission’s concerns with PG&E’s EV program as originally proposed,⁷ and concludes, “we will consider PG&E’s application after it is supplemented to present a more phased deployment approach.” The Scoping Memo then directed PG&E to file a supplement to its application that set forth “an initial phase of EV charging station deployment, **limited to a maximum of 10%** of the total originally proposed number of charging stations, to be deployed over no more than 24 months.”⁸

On October 12, 2015, PG&E filed its supplemental testimony, which included two proposals: (1) a compliant phase 1 proposal to deploy 2,510 charging stations (10% of original proposal), over 24 months from the date of first construction; and (2) an enhanced phase 1 proposal to deploy 7,530 charging stations over no more than 36 months.⁹

1. The Commission Should not Consider the Enhanced Proposal because it is Outside the Scope of this Proceeding

The Commission based its determination of the correct parameters for Phase 1 of PG&E’s EV program on sound reasoning, a thorough review of parties’ comments and a consideration of the mandates in Decision (D.) 14-12-079.¹⁰ However, despite the very clear instructions from the Assigned Commissioner and ALJs, PG&E filed a non-compliant “enhanced proposal” that proposes to deploy 7,530 charging stations over no more than 36 months.¹¹ The number of proposed charging stations in the enhanced proposal is three times the maximum amount of charging stations expressly authorized by the Scoping Memo, and the duration is one-

⁶ *Id.* at p. 4.

⁷ *Id.* at pp. 5-7.

⁸ ACR and ALJ Scoping Memo and Ruling, p. 7. (emphasis added)

⁹ Exh. PG&E-03, p. 1.

¹⁰ *Id.* at pp.4-7.

¹¹ PG&E Supplemental Testimony, p. 1. See also Section C: PG&E Phase 1 Enhanced Proposal, pp. 10-15.

third longer than expressly authorized by the Scoping Memo. A proposal that is three times as large will result in significantly greater impacts on ratepayers, PG&E's competitors, and the private EV charging station market. PG&E's "enhanced proposal" significantly exceeds the specified parameters, is not within the scope of this proceeding, and is not responsive to the Scoping Memo.

Rule 7.3(a) of the Commission's Rules of Practice and Procedure provides that the "assigned Commissioner shall issue the scoping memo for the proceeding, which shall determine the schedule (with projected submission date) and issues to be addressed." Consideration of issues beyond those set forth in the scoping memo is reversible error. In *Southern California Edison Co. v. P.U.C.*, the California Court of Appeal held that the Commission failed to proceed in the manner required by law when it violated its own procedural rules by permitting consideration of issues beyond those set out in the scoping memo.¹²

The Commission's authority to consider issues in this docket extends only to those issues the Scoping Memo explicitly identifies as within the scope of this proceeding, in the context of a proposal that complies with the size and duration requirements laid out in the ruling.¹³ The Scoping Memo expressly limits this proceeding to the consideration of "Phase 1 of PG&E's EV Program as proposed in PG&E's supplement."¹⁴ PG&E's "enhanced proposal" exceeds the scope of phase 1 and thus is beyond the scope of this proceeding.¹⁵ The Scoping Memo does leave open the possibility of a second larger phase of PG&E's EV program, but states that phase 2 "will take place in a separate proceeding."¹⁶

¹² *Southern California Edison v. P.U.C.* (2006) 140 Cal.App.4th 1085, 2006 Cal. PUC LEXIS 948.

¹³ *Id.*

¹⁴ Scoping Memo, p. 9.

¹⁵ See R.12-03-014, Assigned Commissioner and ALJ's Ruling Partially Granting Motion to Strike Testimony, July 17, 2012, pp. 1-2, in which the AC and ALJ partially granted SCE's motion to strike portions of Women's Energy Matters' opening testimony because it addressed issues in track 2 of the proceeding that were not appropriate for consideration in track 1 and thus were beyond the scope.

¹⁶ Scoping Memo, p. 9.

2. PG&E has not Met its Burden of Proof Regarding the Reasonableness of the Enhanced Proposal

The Commission has found that the provisions of Public Utilities Code (“P.U.C.”) §§ 451 and 728 “require utilities to establish that requested rates and charges are reasonable,” and the Commission has consistently held that a utility bears the ultimate burden of proof of reasonableness.³ Other parties, including TURN, do not have the burden of proving the unreasonableness of PG&E’s showing.⁴

TURN has provided the Commission with a more reasonable and less risky alternative EV infrastructure program proposal, as detailed in Section III.A.2. While the Commission would clearly be following the law and prior decisions in rejecting PG&E’s enhanced proposal for failing to meet its burden of proof, the Commission should instead adopt TURN’s proposal, so as to test whether utility deployment of primarily make-ready stubs will facilitate EV market growth.

B. Legal Issues Related to Review of the Contested Settlement

The proposed settlement is an even larger program (approximately 70 more L2 charging ports) than PG&E’s enhanced proposal so it does not comply with the Assigned Commissioner and ALJ’s September 4, 2015 Scoping Memo and Ruling. For the same reasons discussed above in Section II.A.1, the proposed settlement is outside of the scope of this proceeding and should be rejected.

1. Settling Parties Have the Burden of Proof to Show that the Individual Elements of the Contested Settlement Are Reasonable and In the Public Interest

The Commission should not be misled by the fact that Settlement Agreement submitted contained approximately 17 signatories. In fact, with the exception of MCE, all of the parties signing the Settlement either had been inactive in this proceeding, or had supported PG&E’s entire application. As far as TURN can tell from a review of all the testimonies and pleadings submitted in this proceeding, **only one of the signatories** had identified significant disputes with PG&E. Further, none of the consumer advocates are signatories to the Settlement. Thus, the Commission must review the proposed Settlement as a contested settlement.

The Commission has found that in evaluating a contested settlement pursuant to Rule

12.1(d), the Commission will consider the “individual elements of the settlement” to determine whether “each element is consistent with our policy objectives and the law” and whether the settlement “generally balances the various interests at stake.”¹⁷ In determining whether the Settlement is reasonable in light of the whole record and in the public interest, the Commission often looks to whether the proposed outcome is a reasonable compromise of the settling parties’ respective positions.¹⁸ Given that the vast majority of the settling parties do not have any disputes with PG&E, the Commission cannot accept their participation in the Settlement as evidence that it is any more reasonable than the original application.

The Commission has also established that it should reject a contested settlement if one or more of its elements is not consistent with policy or the law.¹⁹ In the context of a contested settlement, the Commission has held that the settling parties share the burden of proof, but the utility has the burden of proof regarding elements of its proposal that are incorporated into the settlement.²⁰ The Commission should be guided by these policies in reviewing the proposed Settlement Agreement.

C. Legal Issues Common to PG&E’s Enhanced Proposal and the Settlement Agreement

1. The Commission should Support the Goals in the Governor’s Executive Orders but Must Prioritize Compliance with Existing Legislation

PG&E and the settling parties reference the goals outlined in the Governor’s Zero Emission Vehicle Action plan to establish the need for the significant size of the enhanced proposal and the proposed settlement.²¹ Executive Order B-16-2012 (hereinafter E.O. B-16-2012 or E.O.) sets a long-term goal of reaching 1.5 million zero-emission vehicles (ZEV) by 2025 and deploying infrastructure to support 1 million ZEVs by 2020. While the CPUC should be mindful

¹⁷ D.96-01-011, 64 CPUC 2d 241 (quoting from D.94-04-088).

¹⁸ See, for example, D.10-06-034, *mimeo.* p. 19; D.10-06-035, *mimeo.* pp. 16-17.

¹⁹ *Id.* See, also, D. 01-12-018, *mimeo.* at 30.

²⁰ D.10-05-023, *mimeo.* at 6 (“If a utility proposal is incorporated in a Settlement, the utility has the burden to establish its reasonableness. If a Settlement incorporates compromise proposals, or specific proposals of other parties, the settling parties share the burden to establish the reasonableness of those proposals.”).

²¹ Exh. PG&E-03, p. 2; Exh. Joint Settling Parties-01, pp. 21-22.

of the goals set in the executive order, it should also be cognizant of the fact that the E.O. does not govern the CPUC as an independent constitutionally created agency.²²

According to Article XII, Section 5 of the California Constitution, the Legislature has plenary power “to confer additional authority and jurisdiction upon the commission” and “establish the manner and scope of review of commission action.”²³ The CPUC is not an executive agency and the Governor’s authority over the agency is limited to the ability to appoint Commissioners.²⁴ The regulatory scheme establishing the Commission was created to ensure that the Commission is independent and is not beholden to another branch of the government.

The CPUC is required to follow the constitution and existing law as amplified by Article XII, Section 5. The California Supreme Court has held that “the Governor is not empowered, by executive order or otherwise, to amend the effect of, or to qualify the operation of existing legislation.”²⁵ Thus while the CPUC should give due consideration to the E.O., is it not an enforceable directive and must be considered within the context of the legislative framework governing utility ownership of EV charging infrastructure.

2. Public Utilities Code 740.3 and Application of SB 350 Transportation Electrification Statutory Provisions

In 2015, the California Legislature enacted SB 350, which was signed by the Governor and enacted into law in Chapter 547 of the Statutes of 2015. SB 350 took effect on January 1, 2016 and added new sections to the Public Utilities Code regarding transportation electrification²⁶ and modified existing sections. SB 350 amended §740.8, which defines the “interests of ratepayers” as used in §740.3(c). Public Utilities Code §740.3(c) requires a determination by the Commission that a utility’s proposal to develop charging infrastructure is in

²² Cal. Const. art. XII.

²³ Cal. Const. art. XII, §5.

²⁴ *Id.*

²⁵ *Lukens v. Nye* (1909) 156 Cal. 498, 503-504.

²⁶ P.U.C. §237.5, which was added by SB 350, defines transportation electrification to mean “the use of electricity from external sources of electrical power, including the electrical grid, for all or part of vehicles, vessels, trains, boats, or other equipment that are mobile sources of air pollution and greenhouse gases and the related programs and charging and propulsion infrastructure investments to enable and encourage this use of electricity.

the ratepayers' interest before authorizing cost recovery for the proposal from ratepayers.²⁷ The Commission has a legislative mandate to consider the impacts of PG&E's enhanced and compliant proposals on ratepayers before approving it or the proposed settlement. As will be discussed in Section V.C below, PG&E has not demonstrated that the ratepayer benefits of the enhanced proposal or proposed settlement outweigh the significant costs. Therefore, TURN urges the Commission to reject the enhanced proposal and the proposed settlement and adopt TURN's proposal to modify the compliant proposal in order to satisfy §740.3(c) and further the goal of increasing ZEVs in California.

a) Public Utilities Code Section 740.12 does not Apply to PG&E's Proposed Programs or the Settlement

The Joint Motion to Adopt the Settlement ("Joint Motion") lists §740.12 as one of the "applicable Public Utilities Code Sections ... for Transportation Electrification" the Commission should consider when reviewing the proposed settlement.²⁸ Section 740.12 address transportation electrification issues and was added to the Code by SB 350. However, none of the provisions of §740.12, including §740.12(b), which is quoted in the Joint Motion²⁹, apply to the enhanced or compliant proposals or the proposed settlement. Section 740.12 includes subsection (d) which states:

"This section applies to an application to the commission for transportation electrification programs and investments if one of the following conditions is met:

- (1) The application is filed on or after January 1, 2016.
- (2) The application is filed before January 1, 2016, but has an evidentiary hearing scheduled on or after July 1, 2016.

The original application for PG&E's EV infrastructure program was filed on February 9, 2015 and evidentiary hearings in this proceeding were held April 25-28, 2016. Therefore neither of the

²⁷ P.U.C. §740.3(c): "The commission's policies authorizing utilities to develop equipment or infrastructure needed for electric-powered and natural gas-fueled low-emission vehicles shall ensure that the costs and expenses of those programs are not passed through to electric or gas ratepayers unless the commission finds and determines that those programs are in the ratepayers' interest."

²⁸ Exh. Joint Settling Parties-01, p. 18.

²⁹ *Id.* at p. 19.

conditions in §740.12(d) have been met, and §740.12 does not apply to the proposed programs or the settlement agreement.

III. STATUS OF PROPOSALS

A. Relationship of Pending Proposals to Commission Directives

1. The Enhanced Proposal and the Settlement Agreement Proposal Defy the September 4, 2015 Scoping Memo and Ruling Ordering a Phased Approach

As was discussed above in Sections II.A and II.B, both PG&E's enhanced proposal and the proposed settlement directly defy the Assigned Commissioner and ALJ's September 4, 2015 Scoping Memo and Ruling, which ordered PG&E to limit its program "to a maximum of 10% of the total originally-proposed number of stations,"³⁰ equal to 2,510 stations, over a two year period.³¹ The Commissioner and ALJs' rationale for ordering PG&E to limit the size of its program is clear; a "more phased deployment approach" is necessary to allow for adequate review and evaluation of the pilot phase results before moving to a larger second phase. The Commission should reject both the proposed settlement and the enhanced proposal because they do not comply with the Scoping Memo and PG&E has not presented a compelling rationale to justify deviating from the specific program parameters in the Scoping Memo.

2. TURN's Proposal Complies with the September 4, 2015 Scoping Memo and Ruling and is an Appropriate Pilot Program

PG&E's compliant proposal meets the specifications ordered in the Scoping Memo and Ruling. TURN's proposal utilizes the general size and scope of the compliant proposal (2,510 charging stations deployed over 2 years) and is consistent with the Commission's directives and policies regarding pilot programs. TURN's proposal includes the same overall amount of charging stations as the compliant proposal but reduces the amount of direct current fast chargers ("DCFC") from 50 to 10 and also substitutes some Level 2 ("L2") chargers for Level 1 ("L1")

³⁰ Scoping Memo and Ruling, September 4, 2015, p. 7.

³¹ PG&E's original application was for 25,000 level 2 stations and 100 direct current fast chargers.

chargers, which are able to meet most EV drivers charging needs at long dwell-time locations such as multi-unit dwellings (“MUDs”) and workplaces.³²

Instead of allowing full utility ownership of all the charging stations, TURN proposes to separate utility ownership of the charging station from the rest of the supporting electrical infrastructure (hereinafter the “make-ready stub”), with a portion of the charging station cost paid for by the site host.³³ Under TURN’s proposal, site hosts would be required to purchase the charging stations³⁴ and then be provided with a rebate to cover 75% of the charging station and network operation cost, decreasing to 50% after one-third of the number of sites for phase 1 have been deployed.³⁵ This rebate structure is designed to leverage private capital and reduce ratepayer risk, incent site hosts to sign up quickly for PG&E’s program, and test the level of private funds that can be leveraged in PG&E’s service territory.

TURN’s recommended changes to the compliant proposal result in approximately \$22 million in ratepayer savings, and a budget for the phase 1 pilot program of approximately \$65 million.³⁶ This is a far more appropriately sized pilot program that reduces ratepayer risks to a reasonable level in the context of expensive charging infrastructure programs. TURN’s proposal is also consistent with the Commission’s finding in D.12-04-045 that “(T)he purpose of a pilot is to test a new concept or program design”³⁷ because it tests the utility of different charging levels and the declining rebate structure tests the level of subsidy that is necessary to induce site host participation in utility EV infrastructure programs.

a) Modifications to TURN’s Proposal in Response to the Settlement

TURN supports the use of dual port L2 chargers when possible and in light of the cost savings provided by this technology, TURN supports a target of 4,000-5,000 L2 ports (approx.

³² Exh. TURN-59, p. 16: 21-26 (Borden).

³³ *Id.* at p. 12: 10-17.

³⁴ This proposal does not apply to charging stations deployed in Disadvantage Communities nor to DCFCs, for those locations TURN is comfortable with full utility ownership in this pilot phase.

³⁵ *Id.* at p. 12: 19-23.

³⁶ *Id.* at p. 26: 22-24. TURN notes that is amount is based on PG&E’s assumptions from their Supplemental Testimony that are likely inflated.

³⁷ D.12-04-045, p. 181.

2,000 – 2,500 dual port L2 charging stations). While an appropriate budget for TURN’s proposal is \$65 million, TURN supports the compliant proposal budget of \$87.4 million as long as a one-way balancing account is utilized and \$87.4 million represents a budget cap. Under the terms of TURN’s proposal and based on the cost savings provided by the utilization of dual-port technology, there should be significant headroom in the \$87.4 million budget. TURN recommends that any remaining funds at the end of the two-year program term be used during the transition or bridge period. The Commission should not authorize additional spending for the bridge period as will be discussed in greater detail in Section V.O.1.

B. Other Party Proposals

While TURN does not provide a detailed analysis of other parties’ proposals here, it is worth noting that a majority of the active non-settling parties all agree on certain key recommendations for modifications to the proposed settlement. These modifications are detailed in Section IV below. The fact that there is general consensus among a majority of the non-settling parties indicates that there is a clear alternative to PG&E’s proposal. The active non-settling parties, including ratepayer advocates (ORA and TURN), low-income and underrepresented communities (JMP), providers of EVSE and related services (EVCA, ChargePoint), site hosts and the tech industry (TechNet), and environmental and alternative energy advocates (Vote Solar) have provided testimony and recommendations supporting an alternative PG&E program. While these parties do not present an uniform alternative proposal, their primary recommendations regarding key components of program design such as size, scope, and ownership structure align with each other closely.

IV. SUMMARY OF RECOMMENDATIONS

The details of TURN’s individual proposal are discussed above in Section III.A. However, TURN presents the following guiding principles in conjunction with the following active non-settling parties: The Office of Ratepayer Advocates, Joint Minority Parties, ChargePoint, Electric Vehicle Charging Association, Vote Solar and TechNet.

- The Program should comply with the September 4, 2015 Joint Assigned Commissioner and Administrative Law Judges’ Scoping Memo and Ruling.
- The program should focus on the underserved market segments of multi-unit dwellings and disadvantaged communities.

- Total budget not to exceed \$87.4 million, (cost of compliant proposal) to be recovered via one-way balancing account, with any cost savings to be re-invested in increased deployment &/or bridge period.
- PG&E shall install 2,500 L1 or L2 chargers with a target of 5,000 ports (utilize dual port charging technology when possible).
- PG&E shall install up to 10 DCFC.
- The program will have a target minimum deployment of 50% in multi-unit dwellings.
- Open and unconstrained process for site hosts to choose equipment and network services. At all locations the site host is customer of record.
- The site host may determine the rate structure and amount charged to drivers for EV charging services, subject to the obligation to implement a load management plan reflecting best practices.
- Except for DCFC, at all sites PG&E can ratebase utility-side infrastructure (“make ready”) up to but not including the EVSE.
- If the Commission deems utility ownership is necessary, then it should be limited to the underserved markets of multi-unit dwellings and low-income communities.
- Site hosts should be required to make a meaningful participation payment.
- The program will be overseen by a Program Advisory Council, which will include representatives from local & state government (including a representative from Energy Division), industry, labor and other stakeholder participants, ratepayer and environmental advocates, and representatives of Disadvantaged Communities.
- If the CPUC has failed to release a Phase 2 decision before the close of Phase 1, PG&E may file an Advice Letter to extend Phase 1 by a of period up to one year, with funding limited to money left over from \$87.4 million Phase 1 budget.
- Disadvantaged Communities shall be defined as the top quartile of Disadvantaged Communities identified by CalEnviroScreen 2.0 on a PG&E service territory basis.
 - For locations within Disadvantaged Communities, a full participation payment waiver shall be provided only to multi-unit dwellings.
- PG&E in its site selection criteria will coordinate with and leverage the utility’s Distribution Resources Plan (DRP) and related programs, including PG&E’s DRP Integration Capacity Analysis, for integrating distributed energy resources, including EVs, onto PG&E’s grid at optimal locations and maximize grid benefits. PG&E will further leverage other forms of Distributed Energy Resources to minimize infrastructure costs, provide necessary grid services and maximize net benefits for all customers in compliance with Public Utilities Code 769.

V. THE PROGRAM ELEMENTS OF THE ENHANCED PROPOSAL AS ORIGINALLY PROPOSED AND AS MODIFIED BY THE SETTLEMENT ARE NOT IN THE PUBLIC INTEREST AND ARE NOT JUST AND REASONABLE

Rule 12.1(d) of the Commission's Rules of Practice and Procedure requires that the Commission find a settlement "reasonable in light of the whole record, consistent with the law, and in the public interest" before it may approve a settlement. As will be discussed in greater detail below, the Settlement is not in the public interest and it is not reasonable in light of the record because it does not address the significant ratepayer risks and potential anti-competitive impacts of the proposed program.

A. Program Scope, Duration and Cost

The Commission should adopt a modified version of PG&E's compliant proposal. As discussed in subpart 1 below, a two-year phase 1 deployment of 2,510 charging stations is more than adequate to provide the data necessary to evaluate the long-term benefits and impacts of PG&E's proposal before considering a full rollout of PG&E's phase 2 program costing more than \$600 million. The \$87 million compliant proposal is adequate and much larger than most other pilots. Indeed, as explained in subpart 2, the terms of the Settlement Agreement Proposal ("SAP") and TURN's testimony show that the compliant proposal cost forecast is much too high, and could be reduced to about \$50 million. However, rather than reduce the forecast costs, TURN suggests that Commission authorize a budget of \$87 million to fund installations for the program and any necessary "bridge" transition period between phase 1 and any subsequent phase 2.

As discussed in subpart 3 below, the Commission should reject the SAP, which costs an additional \$70 million compared to the compliant proposal. The Commission should accept certain elements of the SAP, such as the use of multi-port chargers to reduce cost. The larger scope is completely unnecessary to obtain phase 1 data, and simply increases the real risks of stranded costs if it turns out that utility infrastructure investments do not accelerate EV adoption. Moreover, the claims by settling parties of the need for massive utility investments to support the Governor's EV adoption goals cannot be relied on by the Commission, as they are based on an

erroneous “attach rate” analysis, that actually demonstrates a significantly lower need for commercial and workplace charging.³⁸

1. The Commission Should Approve the Scope of the Compliant Proposal, as It Is Sufficiently Large to Obtain the Required Data to Modify Future Program Design

The Commission appropriately found that it is impossible to accurately predict the potential impacts of PG&E’s original large-scale program on the competitive market and on ratepayers. In order to ensure that legislative concerns regarding competitive impacts and ratepayer benefits are appropriately addressed, it is entirely prudent for the Commission to authorize PG&E to implement the “compliant” proposal as originally directed in the Scoping Memo. The 2,510 charging stations that would be installed under the compliant proposal would provide sufficient data to test key assumptions and program parameters. The phased approach envisioned by the Commission is appropriate for a pilot.

a) The Commission Already Determined the Proper Size and Duration of an Initial Compliant Phase 1 Necessary to Evaluate PG&E’s Entire Program Proposal

As discussed above in Section II.A and III.A, after reviewing PG&E’s original proposal to deploy 25,000 charging stations at a cost of over \$650 million, as well as various comments concerning the possible phasing of PG&E’s proposal, the Assigned Commissioner and ALJs concluded that “[w]e will not consider the EV Program as proposed by PG&E because it does not allow for adequate review and evaluation to determine whether its costs are just and reasonable, whether it results in ratepayer benefits, and whether potential anticompetitive impacts are adequately prevented and/or mitigated.”³⁹ The Scoping Memo found that the significant size of PG&E’s proposal warranted a detailed consideration of the competitive impacts of the proposal and the potential costs and benefits of the proposal, as directed by D.14-12-079.⁴⁰

³⁸ See Section V.A.3.e below.

³⁹ Joint Assigned Commissioner and Administrative Law Judges’ Scoping Memo and Ruling, September 4, 2015, p. 4.

⁴⁰ *Id.* at p. 6.

The Scoping Memo directed PG&E to supplement its application to perform an initial Phase 1 pilot over a two-year period, deploying 10% of the originally proposed charging stations. The Scoping Memo concluded that there needs to be a pause after deployment of 10% of PG&E’s original proposal in order to obtain the necessary data to properly evaluate the potential anti-competitive and ratepayer impacts of PG&E’s proposed program. The Scoping Memo envisioned a transition period that would allow for an evaluation of at least 18 months’ worth of data to determine whether modifications to PG&E’s program should be adopted. The Scoping Memo stated that a separate Phase 2 proceeding “will examine the results from Phase 1 and determine whether increased deployment is merited based on the results, and if so, what that deployment should look like.”⁴¹

The compliant proposal most closely meets the requirements enunciated by the Commission, although the Commission must carefully monitor PG&E’s data collection plan and practices, as discussed more fully in Section V.L below, to ensure tracking of the relevant data. However, the Commission can and should modify PG&E’s bridge year proposal, since funding for the compliant proposal is sufficiently large to accommodate any bridge year needs, as discussed in Section V.O.1 below.

b) The Compliant Program Size Is More Than Adequate to Obtain Necessary Data to Inform Future Program Modifications

The Scoping Memo explained that the primary goal of the Phase 1 program is to obtain sufficient data to evaluate program design, and whether it meets the criteria for utility infrastructure deployment specified in D.14-12-079.

In a recent demand response decision, the Commission similarly described the purpose and scope of a pilot program:

“The purpose of a pilot is to test a new concept or program design that is intended to address a specific area of concern or gap in existing DR programs.”⁴² ...

[P]ilots should be limited in scope and duration so that the results are available in a specified timeframe and limited in budget so that unsuccessful programs have a limited impact on the overall portfolio.”⁴³

⁴¹ *Id.* at p. 9.

⁴² D.12-04-045, p. 181.

⁴³ *Id.* at pp. 181-182.

While the size of any particular pilot may vary depending on the nature of the required data collection efforts, as a general rule a deployment of 10% of the full program scope is adequate for a pilot.⁴⁴ The Scoping Memo appropriately determined that a Phase 1 program deploying 10% of PG&E's planned program chargers, at a cost of almost \$90 million, is sufficient for data collection needs.⁴⁵ In fact, under the compliant proposal, over 2,500 new data points on utility charging infrastructure will be created. Installing over 2,500 charging stations would represent a market size that is larger than the second most successful *state* market in the country,⁴⁶ and would represent almost a doubling of the commercial charging stations within PG&E's service territory.⁴⁷

Installing chargers at over 250 locations is more than sufficient to obtain the data necessary to evaluate the impacts of the phase 1 program and determine whether significant modifications should be made to any future larger-scale program rollout. Of course, PG&E should be required to obtain the necessary information, as discussed in Section V.L below. The Commission should be mindful that mere size does not equate with more robust data.⁴⁸ The key is to identify what data must be collected to answer the relevant questions concerning the impacts of PG&E's program on EV adoption, customer benefits, and the competitive market. Thus, for example, it may be critical to compare relative costs and adoption impacts of stations at workplaces versus MUDs. These questions would not be properly answered even with a larger program if there are no requirements specifying a minimum deployment at different location types as discussed in greater detail in Section V.G.

⁴⁴ Exh. 21, p. 2-2:lines 5-6 and fn. 16 (Aliaga-Caro/ORa).

⁴⁵ Indeed, as discussed in Section e), PG&E's actual program size is much too large due to an erroneous attach rate analysis, so the compliant program size is likewise larger than necessary.

⁴⁶ Exh. 59, Figure 1, p. 5, (Borden/TURN).

⁴⁷ Exh. 59, p. 3: 28-31 (Borden/TURN), and Exh. 4, Table 1, p. 6 (Corey/PG&E). TURN included PlugShare data for all of 2015 in its Comments on the Settlement, p. 6, which shows that 3,141 non-residential ports in PG&E's service territory as of end of year 2015. TURN does, however, note that the PlugShare data significantly underestimates actual workplace charging due to lack of self-reporting. See, 3 RT 210, Corey, PG&E.

⁴⁸ Exh. 21, p. 2-5 (Aliaga-Caro/ORa).

c) The Settlement Agreement Proposal Exceeds the Scope of any Normal Pilot, Including Other EV Pilots Authorized by This Commission

PG&E apparently understands that the Phase 1 program is intended to serve as a pilot to test design parameters and collect data on impacts.⁴⁹ Yet both the enhanced proposal and the SAP fail to meet the standard for pilot programs, because both call for a large scope, doubling the existing amount of non-single family residential charging ports in PG&E's service territory. The enhanced program and the SAP have budgets of \$222 million and \$160 million respectively. Spending hundreds of millions of dollars on "pilots" that have significant risks of stranding the entire investment does not comport with the Commission's policies regarding pilot programs.

Indeed, the proposed compliant scope is larger than the scope of other EV pilots, authorized in California or other states.⁵⁰ This Commission has authorized numerous pilots and research programs deploying various other technologies as part of smart grid proceedings, utility rate cases, and specific applications. To TURN's knowledge, most of those programs have budgets of less than \$10 million.⁵¹

PG&E's compliant proposal is four times the budget of SCE's approved pilot.⁵² The settling parties repeatedly emphasize that the SAP has similar customer bill impacts as the program approved for SDG&E.⁵³ What the settling parties fail to note is that even though SDG&E called its program a "pilot" due to the experimental nature of its charging rate, SDG&E had requested a five-year program at a cost of \$103 million,⁵⁴ and the Commission explicitly found that such a program "exceeds the cost of typical pilot programs" ⁵⁵ The Commission concluded that it "would be foolhardy to authorize a VGI pilot program of \$103 million, using

⁴⁹ 4 RT 308: 1-3, Corey, PG&E.

⁵⁰ Exh. 21, p. 2-3 (Aliaga-Caro/ORR) (SCE's pilot program is 5% of its proposed full-scale roll-out). See, also, "2014-2015 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program," California Energy Commission, January 2015 (The CEC had awarded \$40 million for EV charging stations).

⁵¹ See, for example, D.13-11-002 (authorizing less than \$5 million for the Submetering Pilot Program); PG&E AL 4077-E (proposing \$2.5 million for a pilot to use EVs for demand response); SCE AL 2746-E (proposing \$1.2 million for workplace EV pilot program).

⁵² D. 16-01-023 (approving a Settlement to deploy 1,500 charging stations in one-year at a cost of \$22 million).

⁵³ For example, Exh. Joint Settling Parties-01, p. 22.

⁵⁴ D.16-01-045, Findings of Fact 10, 11 and 16.

⁵⁵ D.16-01-045, Finding of Fact 39, p. 167.

ratepayer money, without some assurance the EV drivers will be using these site installations and charging stations on a frequent basis, and that such a deployment will result in a widespread adoption of EVs for everyday transportation.”⁵⁶ Ultimately, the Commission authorized a three-year program with a scope of about 60-65% of SDG&E’s proposed pilot and with specific cost caps and requirements for installations at MUDs.⁵⁷

The argument of the Settling Parties appears to be that the *relative size* of the PG&E pilot should be similar to the SDG&E pilot, when measured on a per capita bill impact basis. Essentially the Settling Parties are arguing that since the CPUC approved \$45 million for the SDG&E VGI program, it should now approve about four times that much for PG&E, given the relative sizes of the utilities.

But this argument has no rational or evidentiary support, and the Settling Parties do not even attempt to justify it with any logic besides the desire to install more charging stations. A pilot must be designed to obtain sufficient data to answer relevant questions. Whether a pilot in one area must be different in size from a pilot in another area depends on the data that is needed. It is just as possible that the size of a pilot is entirely independent of the location, and depends purely on the size of a statistically relevant sample. For example, to determine whether charging stations in MUDs would be used more than charging stations in workplaces will require some minimum number of chargers in MUDs and workplaces. If the characteristics of MUDs and workplaces are similar in San Diego versus Northern California, however, the same number of locations in either place may suffice to obtain the requisite data. There is no need for “proportional scaling” just to obtain sufficient data. Even more importantly, the Commission’s decision to authorize 350 sites for the SDG&E VGI program was motivated at least in part based on the goal “to test the VGI rate in a variety of different circuits and under different conditions,” due to the circuit-specific nature of the proposed VGI rate.⁵⁸ There is no such need with respect to the proposed SAP.

In order to ensure that legislative concerns regarding competitive impacts and ratepayer benefits are appropriately addressed, it is entirely prudent for the Commission to authorize PG&E to implement the “compliant” proposal, which is already twice as costly as SDG&E’s

⁵⁶ D.16-01-045, Finding of Fact 46, p. 168.

⁵⁷ D.16-01-045, Findings of Fact 66-69, p. 171-172.

⁵⁸ D.16-01-045, p. 129.

program, as originally directed in the Scoping Memo. The benefits of a “phased” approach, which allows for the testing of key assumptions at a smaller scale in order to limit ratepayer risks, are completely negated if the Settlement’s proposed deployment and expenditure level is adopted.

2. The Terms of the Settlement Agreement and Data from TURN’s Testimony Demonstrate that PG&E Can Install More Chargers at the Cost of the Compliant Proposal

The Commission should authorize the general parameters of PG&E’s compliant proposal for Phase 1. However, the Settlement Agreement demonstrates that it is quite reasonable to lower program costs by almost 30% by authorizing the use of multi-port chargers, as TURN had originally recommended. Furthermore, TURN’s testimony showed that allowing the use of L1 chargers and limiting the number of DCFCs could reduce program costs by approximately another 25%.

Thus, the Commission could reasonably authorize the compliant proposal with a forecast budget of \$50 million. However, to ensure adequate data collection, and to provide sufficient funding for any transition period, TURN instead recommends that the Commission authorize a program with a budget cap of \$87.4 million to install as many L1 and L2 chargers as possible,⁵⁹ with the explicit understanding that this amount would also support all installations occurring during the transition period after the first two-year installation period.

a) The Settlement Agreement Proposal Shows that Costs of the Compliant Proposal Could Be Reduced from \$87 million to \$63 Million

The SAP reduces the total costs of PG&E’s original “enhanced” proposal budget by 28%, from \$222 million to \$160 million. Yet the SAP does *not* reduce the scope of work, but in fact marginally increases the target number of L2 and DC chargers. The SAP achieves the significant cost reductions by providing for the use of multi-port L2 and DC chargers.⁶⁰ Of the \$62 million cost reduction compared to the enhanced proposal, \$54 million is due to a reduction in L2 capital

⁵⁹ More specific elements of TURN’s proposal are described in Section III.A.2 above.

⁶⁰ See, Exh. 01, Joint Settlement Agreement, p. 4; Exh. 45. PG&E’s “enhanced” proposal consisted of 7,430 level 2 chargers and 100 direct current fast chargers (DCFC), whereas the Settlement targets 7,500 level 2 charging ports and 100 DCFC.

infrastructure costs, including about an \$18 million reduction in forecast charger costs and a \$28 million reduction in service line extension, panel and conduit (“supply infrastructure”) costs.⁶¹

The SAP budget thus represents 72% of the original enhanced budget for a slightly higher number of chargers. The budget for L2 infrastructure capital costs represents a unit cost (per L2 charger) reduction of 39%.⁶²

TURN recommends that the Commission authorize the compliant proposal but *accept* the change in the SAP to allow use of multi-port L2 and DC chargers. It is reasonable to assume that using multi-port charging for the 2,500 L2 chargers in the compliant proposal should result in a proportional cost reduction, thus resulting in a more reasonable forecast of \$62.7 million for the compliant proposal, a reduction of \$24.3 million.⁶³

b) TURN’s Testimony Demonstrates that an Additional Cost Reduction for a Total Budget of Approximately \$50 Million Is Possible

In the direct testimony of witness Borden, TURN explained why PG&E’s forecast cost of \$87 million for the compliant proposal appeared excessive, based on problems with PG&E’s technology and/or cost assumptions.⁶⁴ Most of these problems also apply to the SAP and are discussed in Section V.C.2.

TURN recommended that the compliant program budget be reduced by \$22 million, or about 25%, by adopting three program design and technology recommendations – a declining rebate for L2 chargers, a reduction of DCFC from 50 to 10, and the replacement of 500 L2 chargers with L1.⁶⁵ Each of these recommendations impact a specific line item in the compliant program budget. TURN’s recommendation to replace about 20% of L2 chargers with L1 chargers would reduce the budget by \$3 million, or almost 20% from the forecast cost of \$15.92

⁶¹ Compare Exh. 03 (PG&E Supplemental Testimony), Table B-4, p. B-7, lines 2-4 with the corresponding lines in Exh. 01 (Settlement Agreement), Appendix E.

⁶² Compare Exh. 03 (PG&E Supplemental Testimony), Table B-4, p. B-7, line 8 (Total L2 infrastructure Capital Costs of \$139,932,141), with Exh. 01 (Settlement Agreement), Appendix E (total L2 infrastructure capital cost of \$85,783,586). $85,783,586/139,932,141 = 0.61$.

⁶³ $\$87 * 0.72 = \62.7 .

⁶⁴ These concerns are detailed in TURN’s direct testimony. Exh. 59, p. 25:line 7 – p. 26:line 11 (Borden/TURN).

⁶⁵ Exh. 59, Table 2, p. 27 (Borden/TURN).

million for L2 chargers.⁶⁶ Adopting TURN's proposal for a declining rebate of 75% and 50% of the charger costs would save \$9.1 million from capital and expense costs for charger stations, or 44% of the total for this category.⁶⁷ TURN's proposed reduction in the number of DCFCs from 50 to 10 would reduce the budget by \$10.0 million, a reduction of 80% from the forecast cost of \$12.5 million for DCFCs.⁶⁸

In addition to these three areas of potential significant cost reductions, it appears that PG&E's cost forecast is somewhat "padded" by including certain elements that could likely be reduced or eliminated through appropriate coordination both within PG&E as well as with external agencies. For example, the SAP includes a forecast of \$1.305 million for a "site host online application portal,"⁶⁹ which would fund the creation of a website for site hosts to submit applications. It is difficult to understand why PG&E needs another million dollars in capital to host a website, given that PG&E already has already developed online application portals for various existing procurement programs such as the SGIP⁷⁰ and the ReMAT.⁷¹ The fact that PG&E's sponsoring witness was not familiar with these existing portals should give the Commission pause,⁷² as it indicates that PG&E develops each IT solution from scratch without taking advantage of existing IT solutions.

Similarly, PG&E forecasts \$1.520 million for the "cost of ownership tool set."⁷³ This online tool will duplicate exactly the same type of information and cost comparisons already provided to potential EV users by Cost of Ownership Calculators sponsored by U.C. Davis and

⁶⁶ Exh. 59, p. 29:lines 16-21, and Attachment 1, p. 30, Line 4 (Borden/TURN). The reduction is calculated based on the forecast \$15,920,947 in capital for "Charger and Network Operations" in the compliant proposal.

⁶⁷ Exh. 59, p. 29:lines 2-6, and Attachment 1, p. 30, Lines 4 and 9 (Borden/TURN). Total charger capital and expense costs are \$15,920,947+\$4,683,284 = \$20,604,231.

⁶⁸ Exh. 59, p. 29:lines 8-14, and Attachment 1, p. 30, sum of Lines 21 and 26 (Borden/TURN).

⁶⁹ Exh. 03, Table B-4, p. B-8, lines 32 (capital) and 43 (expense). The Settlement Agreement Appendix E includes exactly the same costs, but is much more difficult to cite due to lack of line numbering.

⁷⁰ The Commission can take official notice of the existence of the SGIP online application portal at <https://www.selfgenca.com/>.

⁷¹ The Commission can take official notice of the existence of the SGIP online application portal at <https://pge.accionpower.com/ReMAT/home.asp>.

⁷² 5 RT 495-496, Almeida, PG&E.

⁷³ Exh. 03, Table B-4, p. B-8, lines 31 (capital) and 42 (expense). The Settlement Agreement Appendix E includes exactly the same costs, but is much more difficult to cite due to lack of line numbering.

the Department of Energy,⁷⁴ not to mention PG&E's own existing "Plug-in EV Calculator."⁷⁵ Those websites already use a customer's zip code information to calculate cost savings based on local average electric rates and gasoline prices. In hearings, PG&E's witness Almeida tried to argue that there is a need for a more personalized calculator that uses the customer's existing rates and "unique electricity usage."⁷⁶

Mr. Almeida's explanation of the need for a calculator that uses a customer's actual existing rates and usage makes no logical sense for a program designed to install chargers at MUDs and non-residential locations. Mr. Almeida discusses how 1) under tiered rates electricity costs will change depending on existing use, and 2) under time of use ("TOU") rates one needs to provide an analysis "based on the customer's unique electricity usage."⁷⁷ It is important to remember that the purpose of this EV program is to install chargers at MUDs and commercial locations, not at single family residences. The EV charging, either on the "rate-to-driver" or "rate-to-host" option, would be based on separately metered consumption and billed using a commercial TOU rate or a rate of the site host's choosing. In other words, any potential EV buyer's "existing usage," based on their home meter, would have absolutely no impact on the cost calculation of the benefits of purchasing an electric vehicle that would be charged in one of the stations installed by this program.⁷⁸

The costs forecast in the SAP discussed above adopts TURN's primary recommendation, to include multi-port charging. However, the SAP cost forecast does not incorporate any of TURN's three proposed cost reductions due to a declining rebate, the use of 500 L1 chargers, or a reduction of DCFCs. If the Commission adopts any of those proposals, the costs of the compliant proposal would be reduced. Very roughly, the total reduction would be an additional 25% of the costs, resulting in a net cost for the compliant proposal of \$47.0 million.

⁷⁴ Exh. 46.

⁷⁵ Exh. 46. The Commission can take official notice of PG&E's cost calculator, available at http://www.pge.com/en/myhome/saveenergymoney/pev/index.page?WT.mc_id=Vanity_electric_vehicles.

⁷⁶ 5 RT 492-493, Almeida, PG&E.

⁷⁷ 5 RT 493: 6-19, Almeida, PG&E.

⁷⁸ It is possible that PG&E believes there is value for such a calculator to show the impacts of home charging at a single-family residence entirely separate from the proposed infrastructure program. That is a separate issue that should not be addressed in this application.

However, since the recommendation concerning DCFCs impacts only the DCFC capital costs, if the Commission adopts TURN's recommendation to reduce the number of DCFC to 10 in isolation, it could reduce the forecast costs by \$10 million.

c) Rather Than Lowering Forecast Costs, TURN Recommends That the Commission Order PG&E to Use the Remaining Budget to Fund Bridge Year Work

As discussed above, TURN believes that a more reasonable forecast of the costs of the compliant program would be about \$50 million, if the Commission adopts some of TURN's cost cutting recommendations. However, TURN does not recommend that the Commission authorize this lower amount in rates. Rather, TURN supports authorizing the full \$87 million budget for the compliant proposal, but with the explicit finding that this amount should fund both the two-year pilot as well as the bridge period, as discussed further in Section V.O.1. TURN's proposal thus allows PG&E to install more chargers overall, and/or to continue funding installations during the transition bridge period.

d) The Commission Will Need to Closely Evaluate the Reasonableness of Final Costs

As will be discussed in greater detail in Section V.O.2, the SAP proposes a "cost cap" of \$160 million, with a "non-binding goal"⁷⁹ of 7,500 L2 stations and 100 DCFC. However, there is absolutely no guarantee that PG&E will install this many stations. Indeed, the nature of this program is similar to any infrastructure program that installs numerous small projects, rather than one large one. A cost cap for one large project is meaningful. The utility has to complete the project (make it "used and useful") in order to obtain cost recovery. With multiple small projects, a cost cap is almost meaningless, since there is absolutely not guarantee the utility will complete even close to the forecast number of projects.⁸⁰ In other words, if unit costs happen to be 33% higher, PG&E might install fewer charging stations; while if unit costs are lower, PG&E might install more stations.

⁷⁹ Exh. 01, Joint Motion to Adopt Settlement Agreement, p. 12.

⁸⁰ The only exception is if the CPUC mandates a one-way balancing account with shareholder responsibility for all costs in excess of the forecast project unit costs, with a reduction in authorized costs for any uncompleted project. See, for example, D.12-12-030, Ordering Paragraph 6, p. 127.

In order to balance the desire to install a minimum number of charging stations with the need to minimize the risk of actual unit costs being different than forecast, TURN recommends that the Commission adopt PG&E's compliant proposal, but authorize a budget of \$87 to conduct the work. Given that the actual costs of charging station installation should be considerably lower, as discussed above, authorizing a budget of \$87 million should allow PG&E easily to install 2,500 stations over the course of the program term. The Commission should closely review PG&E's actual costs before in evaluating any Phase 2 proposal.

3. The Commission Should Reject the Settlement Agreement Proposal, as it Requests an Additional \$70 Million in Funding with No Obvious Benefits, Significantly Higher Ratepayer Risks, and the Potential to Harm a Competitive Market for EV Charging

The SAP consists of a scope and term that is almost identical to that of the enhanced proposal.⁸¹ Its work scope is roughly one-third that of PG&E's original proposal,⁸² even though the Commission requested a compliance filing of only one-tenth the size of the original. Though providing for explicit phasing after 3 years (rather than 24 months as requested by the Commission), the SAP still proposes 100% ratepayer-funded and utility-owned infrastructure. The only difference with the enhanced proposal is that the SAP reduces total costs by about \$60 million (from \$222 million to about \$160 million) by allowing for the installation of multi-port L2 and DC chargers.⁸³

While TURN applauds the settling parties for accepting the use of multi-port charging technology to significantly reduce costs, as recommended in TURN's testimony, the settling parties have provided no persuasive information to justify a larger program or to allay the Commission's concerns about the impacts of such a large program.

In evaluating whether it should approve the SAP, which would install almost three times the number of L2 charging stations as the compliant proposal at an additional cost of an additional \$70 million, the Commission should consider three critical factors:

- What is the benefit, either to EV drivers or to the data collection goals of Phase 1, of installing an additional 5,000 L2 chargers over the next two years;

⁸¹ See, for example, Joint Motion to Adopt Settlement Agreement, Table 1, p. 6.

⁸² The SAP proposes installing 7,500 L2 chargers, rather than the 25,000 originally proposed.

⁸³ Exh. 01, Joint Motion to Adopt Settlement Agreement, p. 2.

- What is the potential risk to ratepayers; and
- What is the potential impact on the competitive market.

The Settling Parties have provided little evidence that the much larger SAP is necessary to advance the goals of the Phase 1 deployment or to provide any significant incremental benefits. The SAP presents significant risks of stranding another \$70 million in ratepayer investments, and/or negatively impacting the relatively vibrant existing EVSE market in PG&E's service territory. Even though there could be some incremental benefit to EV drivers, on balance TURN strongly recommends against increasing the size and scope of any Phase 1 program beyond the compliant proposal.

a) The Settling Parties Provide No Evidence That a Larger Proposal is Necessary to Meet the Goals of the Phase 1 Program, or to Provide Significant Incremental Benefits

The primary goal of the Phase 1 deployment is to obtain the data necessary to evaluate the various elements of PG&E's proposal. Those elements include:

- A massive deployment of both L2 and DCFCs;
- Deployment in all types of secondary market charging locations, with only a "target" of minimum deployment at MUDs;
- Complete utility ownership and control of all EVSE charging stations.

The purpose of Phase 1 is similar to the goals of a very large-scale pilot – to obtain sufficient data to evaluate a full program rollout. As discussed in Section V.A.1.b above, the construction of about 2,500 charging stations is more than adequate to evaluate the critical elements of PG&E's proposal, given proper tracking of relevant information.

PG&E complains that the compliant program limits the utility to another "pilot"⁸⁴ program for a "small number" of stations that are "not likely to provide sufficient data or information to adequately evaluate the benefits of a larger scale program or inform changes necessary for a broader scale role out."⁸⁵ But neither PG&E nor the Settling Parties provide any analysis to show why installing 2,510 charging stations, or more than are installed in any other state besides California, would be inadequate for statistically significant data collection, assuming PG&E keeps track of the data and installs charging stations in different location types.

⁸⁴ Exh. 03, PG&E Supplemental Testimony, October 12, 2015, p. 4.

⁸⁵ Exh. 03, PG&E Supplemental Testimony, October 12, 2015, p. 2, lines 20-22.

PG&E's compliant proposal would represent an increase of about 80% in the number of commercial L2 charging stations. Even the size of the compliant proposal is unnecessary for a Phase 1 program, which should focus on collecting data for the following key issues:

- actual implementation costs compared to PG&E's estimates;
- impact of the program on EV adoption and what deployment location types result in the highest rates of EV adoption;
- the amount of private capital available to match ratepayer funds;
- effects on the private charging station market;
- where "market failures" exist to focus ratepayer subsidy;
- and other key gaps in current knowledge.

Once data has been collected on these issues, PG&E can then apply for a larger Phase 2 program if the data shows this is warranted.

b) The Size of the Program under the Settlement Proposal Exacerbates Ratepayer Risk and is Not Suitable for a "Phased" Approach

In determining whether ratepayer funding for an infrastructure program is "just and reasonable," the Commission should weigh the risk that the investment will prove to be either unused and/or will fail to meet its goal, even if the specific investment is used. In either case, the utility investment could result in a stranded cost that unnecessarily raises PG&E's utility rates, which are already some of the highest in the nation. The inherent market and technology risks of commercial and public charging infrastructure warrant proceeding carefully to determine optimal program design.

Numerous factors affect consumer adoption of EVs, including the availability and attractiveness of car models, EV car prices, the availability of government rebates, the price of gasoline, consumer awareness, range of EV cars, and skeptical car dealers.⁸⁶ Most of these factors cannot be "solved" with utility deployment of charging infrastructure. According to a survey of California EV adopters, federal and state incentives to offset the upfront price of

⁸⁶ Exh. 59, p. 6 (Borden/TURN).

vehicles were the most often cited “extremely important” factors influencing the decision to purchase and EV.⁸⁷

In approving a reduced scope for the SDG&E pilot, the Commission agreed that whether utility infrastructure investments promote EV adoption is not certain, precisely due to these complex factors influencing consumer preferences for EVs.⁸⁸ The SAP differs from the SDG&E VGI program in promoting commercial deployment at other commercial “long-dwell” locations. Whether such charging station placement will advance EV adoption, or simply risk stranding ratepayer investments, is one of the key issues to test in phase 1.

It is undisputed EV drivers primarily charge their vehicles at home. Also, the battery size and range of most new EVs coming on the market is increasing.⁸⁹ Assuming consumer acceptance and commitment by automakers, capacity and therefore range of EVs will increase without equivalent cost increases. Increased EV range will mean a large majority of drivers will be able to meet their charging needs overnight at their residence.⁹⁰ This is consistent with the findings of the Electric Power Research Institute, which modeled actual driving behavior and the related need for non-residential (“secondary”) charging infrastructure, and concluded:

The need for secondary infrastructure is quite low for most drivers, and when a benefits test is applied, the need for charging infrastructure is even lower. Increased electric range decreases the total number of electric vehicle supply equipment (EVSE) required even further.⁹¹

This change may make secondary charging less important in the future, and increases the ratepayer risk of stranded costs and underutilized assets. The risk is exaggerated by the fact that the SAP includes deployment at various commercial and public locations, and only commits to deploying 20% of the chargers at MUDs⁹²- the location type that most needs investment and is most likely to result in EV adoption as discussed in more detail in Section V.G.2. The SAP’s \$160 million Phase 1 proposal is not specifically targeted to location types that are less likely to

⁸⁷ Exh. 59, p. 6 and fn. 13 (citing to Center for Sustainable Energy (2015). California Air Resources Board Clean Vehicle Rebate Project, EV Consumer Survey Dashboard) (Borden/TURN).

⁸⁸ D.16-01-045, p. 101.

⁸⁹ Exh. 59, p. 9, (Borden/TURN).

⁹⁰ Exh. 59, p. 6-10, (Borden/TURN).

⁹¹ Exh. 59, p. 8 (citing to Exh. 49, p. 8), (Borden/TURN).

⁹² Exh. 01, Settlement Agreement, p. 4.

lead to stranded assets, and is far larger than what is necessary to gather data and test key assumptions.

c) The Settlement Neglects Low-Cost Level 1 Charging and Places Unnecessary Risk on Ratepayers for Significant Investments in High Cost Direct Current Fast Chargers

The Settlement Agreement does not modify the charging technologies in PG&E's supplemental application, which completely excludes L1 charging. As explained in TURN's direct testimony, some amount of L1 charging may be suitable for "long dwell-time locations" like MUDs where many users will charge overnight and vehicle turnover is low, making higher powered charging unnecessary.⁹³ L1 chargers are significantly less expensive than L2 chargers, provide flexibility in program implementation to accommodate more chargers at a site, and have less impact on distribution circuits to minimize potential distribution upgrade costs.⁹⁴

The SAP modifies PG&E's enhanced proposal to *increase* the deployment of DCFCs from 50 to 100, which is equivalent to the number of fast chargers proposed in PG&E's original full-scale \$655 million application that was rejected. The Settling Parties have not justified the extra cost, risks and negative impacts posed by the deployment of DCFCs. First, there are currently three plug standards for DCFCs (as opposed to one common standard for L1 and L2 chargers), which will eventually lead to stranded assets. Second, there are numerous power levels for DCFC which will likely increase over time, again increasing the risk of underutilized ratepayer-subsidized infrastructure. Third, DCFC stations cost around \$241,000 per station, compared to \$11,400 per L2 station according to the Settlement's revised cost estimates.⁹⁵ Fourth, DCFCs will be located in public locations where consumers would likely re-charge during the day using very high capacity charging, thus potentially creating significant demand spikes on distribution circuits during peak load conditions.⁹⁶

⁹³ Exh. 59, p. 16-17 (Borden/TURN).

⁹⁴ Exh. 59, pp. 17-18 (Borden/TURN).

⁹⁵ Exh. 01, Appendix E. L2 Capital Subtotal = \$85,783,586 / 7,500 L2 chargers = \$11,437 per charger; DCFC Capital Subtotal \$24,093, 125 / 100 DCFC = \$240,931 per charger.

⁹⁶ TURN appreciates the notion that EV charging could utilize excess solar production; however, the Commission should carefully consider that overgeneration occurs during afternoon hours in May and April, whereas peak loads occur during June-September. Whether the relative benefits of any use of overgeneration would exceed the costs of grid impacts is one very important study question.

PG&E has also failed to establish that utility involvement to deploy DCFCs is even needed in its territory. The analysis conducted by the National Renewable Energy Laboratory (NREL) for the CEC demonstrated a need of 275 DCFCs for the entire state by 2020,⁹⁷ while according to PG&E’s own testimony, around 270 DCFCs have been deployed in its territory to-date.⁹⁸ In addition to continued deployment of DCFCs from some automakers, the California Energy Commission has recently issued additional rounds of solicitations for up to \$20 million to build DCFCs along highway corridors, many of which will be in PG&E’s service territory. The CEC also requires 25% of funds to be “matched” by private site hosts for a majority of the areas where CEC-funded projects will be deployed.⁹⁹ By contrast, the Settlement does not require any participation payment for DCFC sites.¹⁰⁰

Further, NRG has helped build what it describes as “the largest universal fast charging network in the United States” pursuant to the company’s settlement with the CPUC. NRG continues to deploy DCFCs called “Freedom Stations.” In addition to the 126 stations already deployed, NRG will continue installing more than 50 DCFCs in California.¹⁰¹ Interestingly, one of the obstacles that NRG continues to struggle with is the inconsistency of wait times for PG&E to approve and interconnect the Freedom Stations.¹⁰² PG&E’s efforts to promote DCFC would be better directed at internal interconnection processes rather than ratepayer subsidized DCFCs.

The heightened risks posed by the SAP warrant adoption of the compliant proposal, but with a reduced number of DCFCs and the use of L1 chargers to even further reduce cost and risk.

⁹⁷ Exh. 48, p. 3 (using the “home dominant” scenario).

⁹⁸ Exh. 03, p. 30 (Corey/PG&E).

⁹⁹ California Energy Commission, GFO 15-601 and GFO 15-603, <http://www.energy.ca.gov/contracts/GFO-15-601/>; <http://www.energy.ca.gov/contracts/transportation.html#GFO-15-603>. See “Pre-Application Workshop Presentation” slide 13 (GF 15-601) and slide 15 (GF 15-603).

¹⁰⁰ Exh. 01, Settlement Agreement, p. 5.

¹⁰¹ See Exh. 54, p. 1. NRG will deploy over 50 more fast charger “Freedom Stations” in California. As of December 5, 2015 (the Reporting Date), NRG EV Services LLC had a total of 126 Freedom Station sites either constructed or under development, toward a commitment of at least 200 by end of 2016. 105 of the 126 such sites were operational for California drivers as of December 5, 2015.

¹⁰² *Id.* at p. 8.

d) The Scope of the Proposed Settlement Agreement Could Negatively Harm the Competitive Market

The SAP would exacerbate any negative impacts of the program on the private market, including the effects of overwhelming the private market with essentially “free” (from the site host perspective) charging stations and the effects of utility ownership of charging assets “behind the meter.” The anti-competitive impacts of utility ownership are further discussed in Section V.B. below.

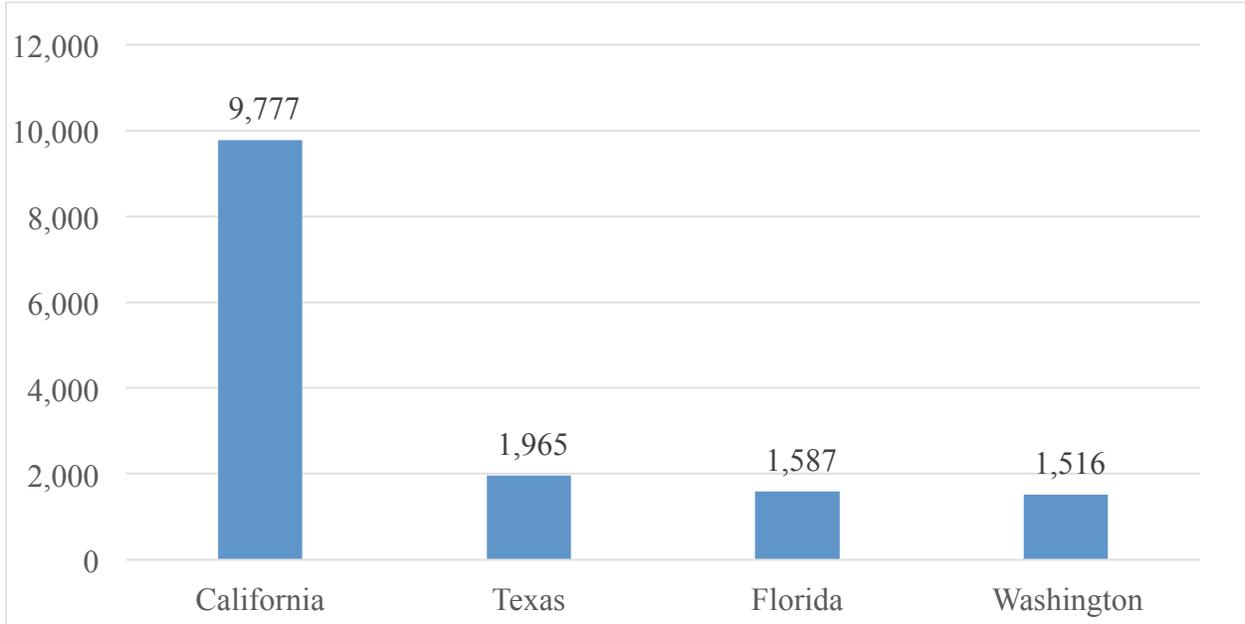
The number of charging stations proposed in the SAP would overwhelm the existing competitive market. There are currently approximately 3,000 commercial L2 charging stations installed in PG&E’s service territory, based on PlugShare data. The SAP proposes to install an additional 7,500 L2 charging stations, or more than double the existing number. PG&E’s service territory is one of the most successful areas for the deployment of charging stations in the country. Having the monopoly utility provide almost free charging stations at such scope would likely overwhelm any demand for chargers provided by market participants who are not part of the utility program.

As illustrated in **Figure 1**, California leads the nation in charging station deployment, and has fostered a charging station market that has thus far delivered its product without the use of ratepayer funds.¹⁰³ In PG&E’s service territory, San Francisco “ranks second in the nation in the availability of Level 2 and fast chargers, both in terms of the number of chargers per resident and the number of chargers per new vehicles sold.”¹⁰⁴ The Commission must prevent this progress from being impeded by utility involvement in the market and protect against ratepayer dollars supplanting private funds.

¹⁰³ Exh. 59, p. 4-5 (Borden/TURN). Not all station deployment has been from private companies - around 3,700 commercial and 400 workplace charging stations have been supported with funds from the California Energy Commission.

¹⁰⁴ Exh. 59, p. 4 (Borden/TURN) (citing to Electric Vehicle Charging Association (EVCA), *2015 Report of California’s Electric Vehicle Charging Industry*, October 2015, p. 2.).

Figure 1: Charging Outlets by State



It is simply unknown whether a very large utility charging infrastructure program akin to PG&E’s “enhanced” proposal is necessary or optimal to achieve California’s transportation electrification goals. Small and targeted deployment by utilities may be equally beneficial to address specific market failures. Given current gaps in relevant data and understanding of market dynamics, the SAP cannot be targeted to where the private market has under-delivered and EV adoption is likely. The benefit of a smaller program is that it does not entail such a large degree of risk and allows for testing of key elements, such as the optimal contribution from site hosts versus ratepayers to motivate infrastructure deployment and utilization. The results and lessons learned from Phase 1, assuming robust and relevant data collection, will allow the Commission to assess more judiciously what the utility’s role in charging station deployment should look like.

e) Any Justifications for a Larger Program Based on PG&E’s Attach Rate Analysis Are Factually Erroneous and Do Not Support a Larger Phase 1 Program

On the key issue of size and scope, the Settling Parties provide no analysis but simply repeat over and over that the larger program supports Governor Brown’s “electric vehicle adoption and infrastructure goals, as well as California’s broader clean air, equity, and climate

change objectives.”¹⁰⁵ The Settling Parties consistently fall back on the argument that 2,500 charging stations is just too small, as even 7,500 charging stations represents “only 3%” of the needed number of chargers needed to meet the Governor’s goal.¹⁰⁶

The Commission should not be swayed by these assertions. The various allegations of the Settling Parties regarding the need for a specific number of secondary market charging stations in PG&E’s service territory are all based on an erroneous “attach rate” analysis that PG&E itself has repudiated.¹⁰⁷ The analysis improperly mixes residential and non-residential data, selects the wrong data set from the NREL analysis, and uses an inappropriate mix of vehicles in the EPRI analysis. Corrections to the analysis show that the proper attach rate is about 15:1, resulting in a “need” for chargers that is one-quarter of the need used by PG&E to size its program.¹⁰⁸ The result is that if PG&E installs 80% of the proposed 7,500 L2 chargers in commercial locations (equivalent to 6,000 chargers), it would install almost **the full market need for commercial chargers by 2020** just in Phase 1, based on PG&E’s corrected attach rate analysis. Such a result would not constitute a “pilot” program designed to collect data to ensure utility investments are appropriate.

TURN anticipates that this will be an important issue to consider in designing the scope of Phase 2, so we summarize only briefly the problems with PG&E’s analysis of the required number of charging stations.

(1) PG&E Conducted Its Own Attach Rate Analysis to Forecast the Need for Charging Stations

PG&E represents that its analysis is based on “independent research,” and cites to two studies by the National Renewable Energy Laboratory (“NREL”) and the Electric Power Research Institute (“EPRI”).¹⁰⁹ However, PG&E itself calculated the 4:1 attach rate by relying

¹⁰⁵ For example, Exh. 01, Joint Motion for Adoption of Settlement Agreement, p. 9.

¹⁰⁶ Reply of Settling Parties, April 18, 2016, p. 5 and fn. 18.

¹⁰⁷ See, for example, Exh. 02, p. 2-4 (Corey/PG&E); Exh. 04, p. 5 (Corey/PG&E); 4 RT 44 (Corey/PG&E).

¹⁰⁸ $15/4 = .267$, resulting in a commercial EVSE “need” of $(0.267*25000)=6675$ chargers.

¹⁰⁹ These studies are marked as exhibits 48 and 49 in the record.

on the EPRI and NREL study for certain data. PG&E’s analysis is contained in a data response that is included in Exhibit 50 in the record.¹¹⁰

(2) PG&E’s Attach Rate Analysis Improperly Mixed Residential and Commercial Charging, and PG&E Admitted the Attach Rate for Commercial Charging is 8:1

In its original application PG&E alleged that its proposed scope of 25,000 EVSE’s was based on independent research that “concludes that there is a need for approximately one **commercial charger** to support every four plug-in vehicles.”¹¹¹ PG&E uses the attach rate analysis to claim that the existing number of commercial chargers is entirely inadequate, since there are about 26 EVs for every commercial charger.¹¹²

PG&E’s analysis improperly mixed home and secondary charging, and thus in no way demonstrates a need for four **commercial** chargers per EV. PG&E’s analysis assumes that the attach rate for multi-family housing is one-to-one.¹¹³ PG&E admitted that the stand-alone attach rate for commercial and workplace charging produced by its own analysis is actually eight-to-one.¹¹⁴ In other words, the need for commercial charging according to PG&E’s own analysis is one-half of the need it claimed in testimony.

(3) A Corrected Commercial Attach Rate is About 15:1

i. Correcting Errors in the NREL Analysis

PG&E indicates that it uses the “Home Dominant” scenario in its analysis using the NREL study. However, PG&E added both the L1 and L2 chargers from NREL’s table in order to

¹¹⁰ Exh. 50, Bates pp. 2-5, PG&E Response to DR CCSF-001-03. See, also, 4 RT 316-317 (Metcalf/PG&E).

¹¹¹ Exh. 04, p. 5 (Corey/PG&E) (emphasis added). Exh. 02, p. 2-4 (Corey/PG&E).

¹¹² Exh. 04 (Corey/PG&E), p. 5:line 10 – 6:line 3. Claiming that PlugShare data demonstrates an existing attach rate of 26:1.

¹¹³ Exh. 50, Bates p. 7, Response to DR 009-01(e) (“Yes, residential charging assumes a 1:1 attach rate.”)

¹¹⁴ Exh. 50, Bates p. 8, Supplemental Response to DR 009-01(g).

calculate the needed number of L2 chargers for its program.¹¹⁵ When the correct number of L2 chargers from NREL’s study is used, the resulting commercial attach rate is 9.8:1.¹¹⁶

ii. PG&E’s Made Erroneous Assumptions About EV Range in the EPRI Analysis

The EPRI model calculates the needed number of chargers based on the actual mix of vehicles and the battery range of the PHEV or BEV. The model uses three standard EVs with ranges of 10, 40 and 100 miles. The model recognizes that the need for charging stations decreases as EV mileage increases, based on the fact that longer-mileage electric vehicles will not require as much charging outside the home.¹¹⁷

PG&E’s use of the EPRI model contains one critical error. PG&E assumed a mix of 20% of vehicles with a 10-mile range, 30% with a 40-mile range, and 50% with a 100-mile range in the EPRI model, resulting in a weighted average range of 64 miles.¹¹⁸ This range is much lower than the weighted average range of the *existing mix* of vehicles in PG&E’s service territory, which is approximately 86 miles.¹¹⁹ PG&E did not even account for the range of the Tesla Model S, which constituted almost 15% of the EV vehicles in PG&E’s service territory in 2015.¹²⁰

But all experts, including PG&E’s own witness, agree that the mix of electric vehicles is only likely to have a longer range in the future.¹²¹ The weighted average range of the incremental electric vehicles registered in 2015 in PG&E’s service territory is 93 miles. If one uses a more appropriate mix of vehicles in the EPRI attach rate analysis, with a weighted average range of 90

¹¹⁵ Compare Exh. 48, Table 1, p. 3 and Exh. 50, Bates p. 4. See, 4 RT 318-321, Metcalf/PG&E. Ms. Metcalf’s responses appear somewhat internally inconsistent and do not explain why PG&E added L1 and L2 chargers to consider a scenario “only looking at Level 2 chargers.”

¹¹⁶ The correct analysis would use 40% of the totals from the “L2” column for “work” (=82,000) and “public” (=20,100), instead of the “total” column. $(400,000)/(.4*(82000+29199)) = 9.8:1$.

¹¹⁷ Exh. 49, p. 1-2 to 1-3. See, also, 4 RT 326, Metcalf, PG&E.

¹¹⁸ Exh. 56, p. 2.

¹¹⁹ Exh. 56, p. 1. The row “weighted average range of all models” and column “cumulative 2015.”

¹²⁰ Exh. 56, p. 1. The Tesla is the “Model S” vehicle.

¹²¹ 5 RT 344:23 – 345:8, Metcalf, PG&E.

miles, the resulting commercial attach rate is about 20:1,¹²² suggesting that PG&E's original proposal was way overblown.

iii. Combining the NREL and EPRI Analyses Results in an Attach Rate of 15:1

PG&E essentially averaged the NREL and EPRI attach rate analyses. If one performs the same type of averaging, but using the corrected NREL (10:1) and EPRI (20:1) results, the outcome is a forecasted attach rate need for commercial chargers of fifteen chargers for every one electric vehicle. This results in a commercial EVSE "need" for PG&E's entire service territory for 2020 that would be about one-quarter of the total need forecast by PG&E, or about 6,700 total commercial L2 chargers.¹²³

Thus, PG&E's own analysis shows if PG&E were to install 80% of the proposed SAP chargers at commercial locations, it would almost fully meet the forecast market need for 2020.

B. Utility Ownership

1. The Full Utility Ownership Model Increases Ratepayer Risks

Under the terms of the SAP, PG&E will own all of the charging stations deployed and all related infrastructure with funding coming exclusively from PG&E's ratepayers, except for the relatively small participation payment collected at some sites. As will be discussed in greater detail in Section V.E, the SAP proposes a very small participation payment of 10 percent of only EVSE costs for MUDs, 20 percent for private, for-profit entities, and no participation payment for sites located in Disadvantaged Communities and at sites owned or leased by school districts, government agencies or non-profit entities.¹²⁴ The Settlement Agreement also waives the participation payment for DCFCs.¹²⁵

The full utility ownership model unnecessarily increases ratepayer cost, harms the private EV charging station market who cannot compete with ratepayer subsidized installations, and

¹²² Exh. 56, p. 4. This vehicle mix is likely conservative for 2020, since the weighted average range of all vehicles added in PG&E's service territory in 2015 and the first few months of 2016 already had a weighted average range of 93 miles.

¹²³ $(25,000) * (4/15) = 6667$.

¹²⁴ Exh. Joint Settling Parties-01, pp. 10-11.

¹²⁵ *Id.* at p. 5.

significantly increases the risk of stranded costs. As will be discussed in greater detail below in Section V.C.2, allowing PG&E to own and rate base charging infrastructure almost doubles the actual costs to ratepayers of the SAP, with a total revenue requirement of over \$292 million.¹²⁶

TURN's proposal for a charging station ownership and rebate structure similar to SCE's EV infrastructure program, but with the level of rebates declining during program implementation, is a far better model.¹²⁷

2. The Purported Benefits of Utility Ownership Can be Realized Under a Make-Ready Program Structure

In evidentiary hearings, PG&E witness Corey gave three justifications for why PG&E needs to own all the charging infrastructure deployed as part of the program, including the charging stations:

1. To "make it really easy for the site hosts to say yes to the infrastructure";
2. Allows for the provision of "safe, reliable equipment that we can maintain and that provides fair pricing for the drivers";
3. "utility ownership is going to give us an opportunity to do grid management."¹²⁸

While these justifications have merit, there is no reason why these benefits cannot be realized via a make-ready model.

First, while it is important that the program be attractive and relatively simple for potential site hosts to participate in, it is also important that free ridership is mitigated to the greatest extent possible. Furthermore, the SAP provides a huge value savings to site hosts who need and want EV infrastructure on their properties so significantly subsidized infrastructure should be very attractive foundationally. Making it too easy for site hosts to participate in the program will likely lead to ratepayer subsidized infrastructure being placed in locations where it is not needed and may not be used. Further, according to PlugShare data, 3,000 commercial L2 charging stations have already been deployed in PG&E's service territory, a majority of which require logistical navigation and funding by site hosts, so site hosts in PG&E's

¹²⁶ Exh. TURN-58, p. 1.

¹²⁷ See Exh. TURN-59, pp. 10-14.

¹²⁸ 2 RT 68: 2-22, Corey, PG&E.

service territory are already “saying yes” without ratepayer subsidized infrastructure and a full turnkey solution.

Second, utility ownership is not a necessary prerequisite to ensure the safe and reliable service. As the administrator of a make-ready program PG&E can ensure that all equipment installed is safe and meets pre-determined specifications and that all work done is by licensed and certified staff. For example, as it did in the Decision on SCE’s Charge Ready Program, the Commission can require the following safety requirements:¹²⁹

- “(a)ll construction, installation, and maintenance of customer participant site infrastructure that is not performed by employees of SCE will be performed by contractor’s signatory to the International Brotherhood of Electrical Workers (IBEW) who hold a valid California C-10 contractor’s license.”
- “To ensure that contractors install electric vehicle infrastructure safely, the electricians must receive certification from the Electric Vehicle Infrastructure Training Program.”

Further, PG&E witness Corey admitted that the benefits of utility ownership of “safety, reliability, operations and maintenance” could be accomplished without utility ownership.¹³⁰ Witness Corey also stated that PG&E plans to contract with a third party provider for the operation and maintenance of the charging stations.¹³¹

Third, the grid management benefits PG&E asserts will be provided by utility ownership can also be provided through a make-ready model. As will be discussed in greater detail below in Section V.C.1 & V.F, the only “grid management” activities the SAP will engage in is passing on a TOU rate.¹³² PG&E witness Corey admitted in evidentiary hearings that the TOU rate could be passed onto EV drivers regardless of whether or not the utility owns the charging stations.¹³³

Corey did distinguish between the rate-to-host and the rate-to-driver options in this regard, stating, “(T)he TOU rate to host would not require ownership of the charger. The TOU rate to driver we believe would benefit from PG&E ownership.”¹³⁴ While the “rate-to-driver” option may benefit from utility ownership, PG&E has not produced compelling evidence to

¹²⁹ D.16-01-023, pp. 47-48.

¹³⁰ 4 RT 295: 14-19, Corey, PG&E.

¹³¹ 3 RT 288: 2-8, Corey, PG&E.

¹³² See also Section V.F.

¹³³ 4 RT 295: 14-19, Corey, PG&E.

¹³⁴ 4 RT 294: 25-28, Corey, PG&E.

support this assumption. TURN notes that SCE’s Charge Ready EV infrastructure program requires all charging stations utilizing the make-ready stubs deployed as part of the program to be served on an applicable TOU.¹³⁵ Therefore, utility ownership is not necessary to provide the “grid management” activities contemplated under the SAP.

3. The Full Utility Ownership Model Proposed in the Settlement Agreement Program does not Satisfy the Balancing Test from Decision 14-12-079

Decision 14-12-079 affirmed the balancing test articulated in D.11-07-029, which requires “the benefits of electric utility ownership of charging infrastructure ... be balanced against the potential competitive limitation.”¹³⁶ The Commission applied this balancing test to SDG&E’s EV charging infrastructure program and proposed settlement. In applying the balancing test to SDG&E’s original proposal, the Commission determined:

“Under SDG&E’s original VGI proposal, the 100% ownership of the EV site installations, combined with the SDG&E prescribed specifications for the EVSE, and providing the EVSE infrastructure to site hosts at no cost, may result in anticompetitive impacts on EV charging operators and EVSE manufacturers.”¹³⁷

The same rationale is applicable to the present case because the factors noted in the above finding of fact are all applicable to the SAP except for the fact that the under the SAP some site hosts will make a small participation payment. TURN also notes that the SAP differs from the SDG&E settlement in that it does not involve the testing of a dynamic rate, such as the VGI rate in the SDG&E settlement. SDG&E listed the testing of the VGI rate as one of the primary benefits of utility ownership of the charging stations.¹³⁸

Further, in determining that the settlement agreement as modified by the Decision did comply with the competitive balancing test, the Commission noted that while the program may still have anti-competitive impacts, the fact that “at least two potential competitors of SDG&E have agreed to the Proposed Settlement, which suggests that their competitive concerns have been addressed or resolved by the Proposed Settlement.”¹³⁹ This is not the case with the SAP. ChargePoint, NRG, and the Electric Vehicle Charging Association all declined to sign onto the

¹³⁵ D.16-01-023, p. 33.

¹³⁶ D.14-12-079; p. 11, COL 2.

¹³⁷ D.16-01-045, p. 169, FOF 53.

¹³⁸ *Id.* at p. 106.

¹³⁹ *Id.* at p. 107.

proposed settlement. The fact that two of the largest EVSE providers and a non-profit group representing EV charging companies have declined to sign on to the proposed settlement is a clear indication that significant competitive concerns remain.

The proposed benefits of utility ownership in this case can be achieved without utility ownership of charging stations. Thus, the benefits of utility ownership do not outweigh the competitive limitations. Thus, the SAP does not meet the balancing test articulated in D. 14-12-079.

C. Costs v. Ratepayer Benefits

The cost of the SAP is far too high for the limited and speculative benefits ratepayers may receive. When evaluating the SAP, the Commission should be cognizant of the fact that PG&E customers are facing significant rate increases in the coming years and the cost increases of the SAP only exacerbate the affordability problem. For example, under PG&E's request in its 2017 General Rate Case application, the average residential customer will see a monthly bill increase of \$4.¹⁴⁰ Also, under PG&E's Gas Transmission and Storage Rate application, residential customers will see a monthly bill increase of \$5.23 if PG&E's request is granted.¹⁴¹ These combined increases could result in a monthly increase of almost \$10 for customers who are already facing huge cost of living increases and meager wage increases. The air quality benefits and "grid benefits" the settling parties assert the SAP will provide will likely mean little to customers who are struggling to pay their energy bills and are facing disconnections.

Requiring ratepayers to subsidize charging infrastructure installed on private property and that many customers will never use, raises significant equity concerns. Accordingly, the Commission must strive to ensure any ratepayer funded EV infrastructure program limits risk to ratepayers to the greatest extent possible and provides the tangible benefits. The SAP does not meet this threshold because the size and cost are unnecessarily high for a pilot program and there has not been an adequate demonstration of ratepayer benefits.

¹⁴⁰ Exh. TURN-53, p. 1-7.

¹⁴¹ *Id.* at p. 17-13.

1. The Enhanced Proposal and the Settlement Agreement Proposal do not Comply with the Requirement in Public Utilities Code Section 740.3(c) that EV Charging Infrastructure Investments be in the Interests of Ratepayers

As was discussed up in Section V.A.3, the SAP includes significant risks to ratepayers that are not outweighed by the potential ratepayer benefits. PG&E has not presented a cost effectiveness analysis for the enhanced proposal or the SAP¹⁴² so PG&E has not demonstrated that ratepayers will directly benefit from the program. Section 740.3(c) of the Public Utilities Code mandates that any costs recovered from ratepayers for charging infrastructure must support ratepayers' interests:

“The commission's policies authorizing utilities to develop equipment or infrastructure needed for electric-powered and natural gas-fueled low-emission vehicles shall ensure that the costs and expenses of those programs are not passed through to electric or gas ratepayers unless the commission finds and determines that those programs are in the ratepayers' interest.” (emphasis added)

Therefore the Commission's review of the SAP must consider whether utility ownership of PEV infrastructure under the circumstances is “in the ratepayers' interest.” P.U. Code §740.8 provides guidance as to the meaning of the interest of ratepayers as used in §740.3(c). Section 740.8 states:

As used in Section 740.3 or 740.12, **‘interests’ of ratepayers, short- or long-term, mean direct benefits that are specific to ratepayers**, consistent with both of the following:

- (a) **Safer, more reliable, or less costly gas or electrical service**, consistent with Section 451, including electrical service that is safer, more reliable, or less costly due to either improved use of the electric system or improved integration of renewable energy generation.
- (b) Any one of the following:
 - (1) Improvement in energy efficiency of travel.
 - (2) Reduction of health and environmental impacts from air pollution.
 - (3) Reduction of greenhouse gas emissions related to electricity and natural gas production and use.
 - (4) Increased use of alternative fuels.
 - (5) Creating high-quality jobs or other economic benefits, including in disadvantaged communities identified pursuant to Section 39711 of the H&S Code. (emphasis added)

¹⁴² Exh. TURN-53, p. 1.

Section 740.8 requires a ratepayer funded EVSE program to produce both the direct benefits to ratepayers listed in subsection (a) and at least one of the more generalized societal benefits listed in subsection (b) in order to be in the “interests of ratepayers.” Thus, in order to ensure compliance with §§704.3(c) and 740.8, the Commission must evaluate the proposed settlement to ensure the program will provide direct benefits to ratepayers.

The Joint Motion lists the “ratepayer benefits” the SAP will provide consistent with §740.8(a) but PG&E and the settling parties have not provided any analysis or evidence to demonstrate these benefits.¹⁴³ All but one of the six benefits listed are based on the provision of “more reliable” or “less costly” service as a result of “leveraging PG&E’s Distributed Resource Plan Integration Capacity Analysis to improve site selection” or the “improved use of the electric system that will result from time-of-use price signals and other load management strategies.”¹⁴⁴

Interestingly, for the program cost estimate of transformer upgrades, PG&E assumes that all L2 charging will occur on peak.¹⁴⁵ While PG&E cost assumptions are based on the distribution peak load and not the system peak load, to the extent distribution and system peaks are coincident PG&E has not accounted for the benefits of off-peak charging in its cost estimates. It is unclear why PG&E is not accounting for the benefits resulting from its proposed “improved use of the electric system” when determining program costs. None of these alleged benefits are related to the size of the SAP and PG&E did not present any evidence that these “benefits” could not be derived from a smaller program such as the compliant proposal.

More importantly, as discussed below in Sections V.F and V.I, there is no guarantee under the SAP that these benefits will materialize. Merely using a TOU price signal and “other load management strategies” is not guaranteed to shift EV load “to hours of the day when there is spare capacity in the grid” or to “improve integration of renewable generation.” Further, the settlement agreement and Joint Motion do not provide any detail regarding the load management strategies that will be used.¹⁴⁶ In evidentiary hearings, PG&E witness Corey admitted that there

¹⁴³ Exh. Joint Settling Parties-01, pp. 20-21.

¹⁴⁴ *Id.*

¹⁴⁵ Exh. TURN-59, p. 26: 10-11 & FN 69 (Borden).

¹⁴⁶ See Section 6. of the Settlement Agreement “Fuel Savings, Load Management, & Renewables Integration” which states “Load Management tactics may include, but are not limited to,

will not be a load management program in phase 1¹⁴⁷ so it is unclear how any of the proposed load management benefits will actually accrue to customers from the SAP.

Due to the lack of real-world data available regarding charging infrastructure, there is no guarantee that any of the benefits discussed in the Joint Motion will actually benefit ratepayers. Therefore, the proposed settlement does not comply with the requirement of §740.3(c) that the program be “in the ratepayers’ interest.”

2. The Costs of the Proposed Settlement are Much Higher than Necessary

PG&E’s Cost Estimates for the enhanced proposal were significantly inflated and the costs of the SAP are still very high when compared to similar programs and private market costs. One example of PG&E’s inflated costs is the SAP capital costs of approximately \$132 million to deploy 7,500 L2 ports (approximately 3,750 dual port stations) – by contrast, the California Energy Commission (CEC) has awarded around \$40 million to build 9,369 stations.¹⁴⁸ Certainly the scope of work is not identical such that these costs may be compared apples to apples, but it seems the CEC has done much more with much less; for example, by leveraging private capital, as recommended by TURN.

Further, PG&E’s costs to deploy DCFC are significantly greater than the CEC or NRG. Under the SAP, PG&E proposes to deploy 100 DCFC at a capital cost of \$24 million¹⁴⁹, approximately \$240,000 per DCFC. Whereas, the CEC recently issued almost \$9 million in grants to have 61 DCFC built at 41 sites¹⁵⁰, a cost of approximately \$150,000 per DCFC. When asked about the large discrepancy in these costs, PG&E’s lead witness Corey said that she believed PG&E’s staff “has done a comparison” between the CEC program costs and PG&E’s cost estimates but that she was “not familiar with the numbers.”¹⁵¹ TURN has not seen any such

charging curtailment during peak system usage, communications with drivers to voluntarily avoid or limit charging during peak system usage, or integration with other demand management technologies (such as stationary energy storage).” Exh. Joint Settling Parties-01, pp. 9-10.

¹⁴⁷ 2 RT 71: 7-9, Corey, PG&E.

¹⁴⁸ Exh. TURN-59, p. 25: 12-14.

¹⁴⁹ Exh. Joint Settling Parties-01, Appendix E.

¹⁵⁰ Exh. ChargePoint-61, p. 1.

¹⁵¹ 2 RT 186: 4-6, Corey, PG&E.

comparison in PG&E's filings and encourages the Commission to look into this issue more when considering if such a large expenditure of ratepayer funds is a prudent investment.

Another significant additional cost of the SAP to ratepayers is that because PG&E proposes to own all of the equipment the utility will ratebase all capital expenditures and will earn 8.06% rate of return¹⁵² over the life of the equipment. This significantly increases the overall costs to ratepayers of these investments. For example, while the capital costs for DCFC under the SAP are slightly more than \$24 million, the total revenue requirement for the DCFC portion of the SAP is almost \$61 million.¹⁵³ Similarly, while the total budget for the SAP is \$166 million, the total revenue requirement for the SAP is over \$292 million.¹⁵⁴ When evaluating the SAP and alternatives put forth by parties, the Commission must consider that the total cost to ratepayers of the SAP is almost \$300 million and evaluate the appropriateness of the SAP's ratepayer risks and benefits in this context.

In addition to the very high costs for DCFC, TURN has identified the following areas of concern with the proposed SAP budget:¹⁵⁵

- PG&E assumes capital "contingency" amounts of \$9.7 million and \$4.8 million for L2 and DCFC respectively, and expense "contingency" of \$2.1 million for L2 and DCFC combined. "Contingency" thus accounts for 10% of the program's total cost.
- PG&E budgets \$3.4 million in capital costs to build an "EV Cost of Ownership Tool" (\$1.2 million) and a "Site Hose Online Application Portal" (\$1 million) and includes over \$1.1 million in capital contingency costs for these items. Additionally, PG&E estimates almost \$2 million in expenses and O&M costs related to these projects. These estimates appear inflated.
- PG&E treats \$3.4 million of the education, outreach, and support costs as "capital" costs.
- PG&E assumes all L2 charging occurs "on-peak." This affects PG&E's estimate for transformer upgrades (and perhaps other cost inputs).

D. Choice And Selection Of EVSE, And Network Services; Supplier Diversity

1. Supplier Diversity

TURN appreciates the changes the proposed settlement made to PG&E's original proposal in an attempt to alleviate barriers to participation for EVSE and network services

¹⁵² Exh. TURN-58, p. 1.

¹⁵³ *Id.* at p. 4.

¹⁵⁴ *Id.* at p. 1, see line 1, \$292,202,974 is the total operating revenue for the SAP.

¹⁵⁵ See Exh. Joint Settling Parties-01, Appendix E.

suppliers. While these changes are a step in the right direction, they do not go far enough to address the concerns of the majority of the suppliers that are parties to this proceeding. As discussed above in Section V.B, ChargePoint, TechNet, NRG, and the Electric Vehicle Charging Association all declined to sign onto the proposed settlement because they are concerned about the potential anti-competitive impacts of the program.

The primary anticompetitive aspect of the SAP results from the large program size as discussed in Section V.A.3.d. Consistent with the conclusion in the Scoping Memo, a smaller pilot phase is necessary in order to obtain the necessary data to properly evaluate the potential anti-competitive and ratepayer impacts of a phase 2 program. The other potential anti-competitive impacts arise from the proposed structure and implementation of the SAP. ChargePoint has identified the following concerns with the SAP's proposed equipment and services procurement process:

“restrictions in PG&E's procurement process, including PG&E's apparent intent to procure network services separately from EV charging equipment, and lack of customer involvement in the selection, purchase, operation, or pricing for DC fast charging facilities.”¹⁵⁶

TURN echoes these concerns and urges the Commission to consider the comments of participants in the private EV charging market on these issues.

2. Choice and Selection of EV Supply Equipment

TURN supports site host choice of EVSE and services. As discussed in Section V.A.3.c, TURN recommends that L1 chargers be included in the list of eligible equipment for site hosts to choose from. While the settlement does allow site hosts to have some limited involvement in choosing equipment from an annually updated “list” of pre-qualified providers, it does not fully resolve questions of customer choice. As TechNet noted, the SAP's equipment and services procurement process allows PG&E to ““make the market” within its service territory by predetermining options available in those areas.”¹⁵⁷ This concern is exasperated by the fact that

¹⁵⁶ ChargePoint Comments on Settlement Agreement, April 12, 2016, p. 4.

¹⁵⁷ TechNet Comments on Settlement Agreement, April 12, 2016, p. 4.

the details for the proposed RFP process are still largely unknown and PG&E has not guaranteed that it will be inclusive of the primary business models in the existing EVSE market.¹⁵⁸

As discussed in Section V.B above, instituting a make-ready model for this program would significantly mitigate the potential anti-competitive impacts of the SAP. TURN urges the Commission to consider this approach as it provides many other benefits in addition to reducing anti-competitive impacts. At the very least, the Commission should ensure that this pilot program is sufficiently limited in size and designed to provide the necessary data to allow for a full evaluation of the program's impact on competition prior to considering a larger scale phase 2 program.

E. Site Selection Criteria, Site Host Role, and Customer Payments

1. The Proposed Amounts for the Site Host Participation Payment in the Settlement Agreement are too Low to Qualify as a Meaningful Contribution

TURN appreciates that the SAP modifies PG&E's original proposal to include a participation payment but unfortunately the amount proposed is nominal and does not provide any of the benefits a participation payment should be designed to produce. The participation payment proposed in the SAP is based on the cost of only the EV Charger (not any of the supporting infrastructure) and then apportioned by 10% or 20% for MUDs and for private, for-profit entities, respectively.¹⁵⁹ PG&E did not provide an estimate for the approximate amount of this payment but one of the settling parties acknowledged that it is "nearly identical" to the SDG&E's recent participation proposal for its EV charging infrastructure program.¹⁶⁰ SDG&E submitted Advice Letter 2886-E on April 25, 2016, and proposed a participation payment based off a fixed dollar amount for the average EV charger cost on a per port basis apportioned by 10% or 20% for MUDs and workplaces respectively, thus SDG&E's participation payment proposal is very similar to that in the SAP.

In a protest to Advice Letter 2886-E, TURN estimated the amounts of the participation payments under SDG&E's proposal and found that site hosts would only

¹⁵⁸ 2 RT 77:12-27 & 78: 12-14, Corey, PG&E.

¹⁵⁹ Exh. Joint Settling Parties-01, pp. 10-11.

¹⁶⁰ 5 RT 542: 9-15, Baumhefner, NRDC.

have to pay \$180 (10% of average per port cost of L1 or L2 charger) or \$360 (20% of average per port cost of L1 or L2 charger) per port.¹⁶¹ TURN's estimate is based on assumptions in SCE's and SDG&E's application workpapers and thus the actual amounts for the SAP will be somewhat different, but the estimate demonstrates that site hosts will pay virtually nothing in monetary terms and as a percentage of the total cost of installation under both SDG&E's and the SAP's participation payment proposal.

The fact that PG&E did not account for the participation payment anywhere in the proposed costs and revenue requirement for the SAP also indicates that it will not provide meaningful value to ratepayers.¹⁶² Further, under the terms of the SAP, any revenue collected from participation payments will be credited against O&M costs and will not be an offset to ratebase which provides even less value for ratepayers because it does not reduce the portion of SAP costs that PG&E earns a rate of return on.¹⁶³

Both the level and structure of the participation payment proposal in the SAP is concerning. As the Commission acknowledges in its Decision approving SCE's Charge Ready pilot "Too large a rebate [too small a participation payment] and ratepayers will unnecessarily be funding what the market could provide."¹⁶⁴ In addition, TURN believes a participation payment can help allocate investment where it is most likely to influence EV adoption and mitigate "free-ridership." A meaningful participation payment is especially important for the workplace market segment because PG&E does not have a strategy for distinguishing between site hosts who would have installed the charging stations regardless of participation in the program.¹⁶⁵ The nominal payment proposed in the SAP is unlikely to accomplish this. Further, as a phase 1 program, the SAP provides an opportunity to collect data on the market's "willingness to pay". TURN's declining rebate proposal, discussed in greater detail in Sections III.A.2 and V.A.2.b, incorporates these elements.

¹⁶¹ See TURN Protest to Advice Letter 2886-E, May 16, 2016, Attachment 1, estimate based on assumptions in SCE's and SDG&E's application workpapers.

¹⁶² 5 RT 614: 4-11, Barry, PG&E; See also Joint Settling Parties-01, Appendix E.

¹⁶³ *Id.* at 614: 12-15.

¹⁶⁴ D.16-01-023, p. 14.

¹⁶⁵ 3 RT 260: 15-20, Corey, PG&E.

2. The Participation Payment Waiver Categories are Too Broad and are Unsupported by the Record and Commission Precedent

The SAP proposes participation payment waivers beyond those to sites located in disadvantaged communities (“DACs”). Under the terms of the SAP, all non-profit organizations, government agencies and sites owned or leased by school districts would qualify for a participation payment waiver, which means these sites would pay nothing for charging stations installed at their properties.¹⁶⁶ All of these categories are defined very broadly and will likely lead to profitable private entities receiving 100% ratepayer subsidized charging infrastructure. To TURN’s knowledge, PG&E has not conducted a census of how many sites in its service territory will be eligible for the waiver, thus it is possible that the entire program could be comprised of site hosts who do not contribute anything to participate in the program. Further, the settling parties do not provide any justification that the waivers are in the public interest.

The categories used to define entities eligible for the participation payment waivers in the SAP are very broad and include many location types that are not appropriate for 100% ratepayer subsidization. For example, “non-profit entities” encompass a diverse range of organizations, many of which have significant revenues. As was discussed in evidentiary hearings, both the NFL and Kaiser Permanente are non-profit entities that have revenues of \$7 billion and \$25 billion respectively.¹⁶⁷ Yet under the terms of the SAP, these organized would be eligible for 100% ratepayer subsidized EV charging infrastructure. When asked about this, the panel of settling parties admitted that while the SAP puts all non-profit entities “in the same basket” for purposes of the participation payment waiver¹⁶⁸, the program advisory council will observe the implementation of the program.¹⁶⁹ However, even the panel of settling parties admitted that the program advisory council does not have the authority to change the program

¹⁶⁶ Exh. Joint Settling Parties-01, p. 11.

¹⁶⁷ 2 RT 66: 11-28, Settling Party Panel.

¹⁶⁸ *Id.* at p. 66: 22-25.

¹⁶⁹ *Id.* at p. 67: 4-9.

terms¹⁷⁰ and can only make recommendations for PG&E to consider, with PG&E making “the final calls”.¹⁷¹

The Settlement Agreement also broadly defines government agencies and it is unclear if it includes all local, state and federal government agencies including the military. TURN questions the appropriateness of ratepayers subsidizing government agencies. Government agencies are generally funded by tax revenues, which in the case of state and federal agencies are generated from all California and U.S. taxpayers respectively. Requiring PG&E’s ratepayers to subsidize all U.S. and/or California taxpayers is unfair and inequitable. Further, federal and state income taxes use mildly progressive tax rates that increase based on income, while utility bills are regressive and are not based on income. The distributional impacts of using tax revenues versus charges on utility bills are very different. The Settling Parties have failed to present compelling evidence for why PG&E ratepayers should fully subsidize charging stations at all government agency locations.

TURN notes that neither of the two Decisions approving utility EV charging infrastructure programs included a participation payment waiver for sites beyond DACs. For example, D.16-01-045 does not include a single mention of waiving the participation payment for any location besides those in DACs¹⁷² and Finding of Fact #20 provides clear direction that the participation payment waiver only applies to sites in DACs.¹⁷³ Accordingly, the SAP’s proposal to significantly expand the eligibility requirements for the participation payment waiver should be rejected.

3. Expanding Participation Payment Waiver Eligibility Will Increase Negative Impacts on the Private Market

Decision 16-01-045 which adopted SDG&E’s EV infrastructure program, relies on the existence of a participation payment as one of the key factors for determining that the program is not anti-competitive for purposes of the EVSE Ownership Balancing

¹⁷⁰ *Id.* at p. 70: 2-6.

¹⁷¹ *Id.* at p. 114: 4-7.

¹⁷² D.16-01-045, pp. 146-148.

¹⁷³ *Id.* at p. 163, FOF 20.

Test.¹⁷⁴ Because the SAP proposes a similar program structure to SDG&E’s program, the Commission’s rationale in D.16-01-045 regarding participation payments is relevant to the present case. The s amount of locations that will be eligible for participation payment waivers under the SAP increases the potential for a chilling effect on the EVSE private market. TURN is also concerned about the potential negative impact on the future EVSE market. The expansion of the waiver categories is likely to promote the assumption by property owners that charging stations should be free. This may make property owners reluctant to make investments in EVSE in the future.

F. Load Management, Time Of Use Rates, Pricing To EV Drivers

1. The Settlement Agreement Proposal Claims Benefits Due to Its Two Billing Options With Little Analysis or Evidence

Originally, PG&E proposed to use “smart charging” to drive grid benefits, but provided absolutely no details on how this would be done.¹⁷⁵ The SAP modifies PG&E’s proposal to provide two different billing options, including a “rate-to-driver” and a “rate-to-host” option, analogous to the design of the SDG&E VGI program.¹⁷⁶

The settling parties contend that these rate structures would benefit ratepayers by providing “less costly” and “more reliable” electrical service due to: 1) improved integration of renewable generation that will result from using time-of-use rates as a foundation for load management; 2) using TOU price signals and other load management strategies that shift EV load to hours of the day when there is spare capacity in the grid; and 3) the improved use of the electric system that will result from leveraging PG&E’s Distributed Resource Plan Integration Capacity Analysis to improve site selection.

The Settling Parties desire for the CPUC to find that the SAP provides benefits as defined by §740.8(a) by providing “less costly” or “more reliable” electrical service due to improved grid utilization or renewable integration. The problem is that the rate structures proposed in the SAP do not actually make electric service “less” costly than it would be if EV charging stations were built and used totally separate from the proposed program, because in those cases the rates

¹⁷⁴ D.16-01-045, p. 109.

¹⁷⁵ Exh. 02, p. 2-14 to 2-15.

¹⁷⁶ Exh. 01, Settlement Agreement, Sec. 6, p. 9-10.

charged to the EV driver may be exactly the same. The SAP does nothing to fundamentally change the *status quo*, and tellingly the settling parties do not provide any explanation of how the SAP achieves these claimed benefits, aside from the promise of developing the “Advanced EV Grid Support” program for phase 2.¹⁷⁷

TURN does not suggest that this lack of incremental benefits is a bad thing, and TURN supports testing TOU rates for EV charging. However, it is important to recognize that there is nothing unique in the rate options of the SAP that ensures an incremental benefit that would not otherwise occur due to EV charging at MUDs and commercial locations even without the utility program. Furthermore, there are potential negative impacts of the “TOU Rate-to-Driver” option that warrants allowing more flexible options to meet the needs of site hosts.

2. The “TOU Rate-to-Driver” Option May Not Provide Net Benefits, and Could Lead to Some Harmful Results

Under the “TOU Rate-to-Driver” billing option the EV driver would pay the “CPUC-approved TOU rate,” based on the underlying TOU rate applicable to the commercial customer who installs the EVSE. This could be the A-6, A-10 or E-19 rate, depending on the commercial customer’s underlying rate schedule.

PG&E’s explanation of how the Rate-to-Driver option would work is somewhat confusing, and raises a question as to whether this option would conflict with the desire of an EV owner to charge their vehicle at a favorable rate, especially when parked at a workplace or commercial establishment, and/or impair the interest of a commercial site host to ensure utilization of EV charging equipment that occupies a valuable parking space. Fundamentally, whether such a pricing option will result in system benefits is a valuable question to study in this pilot; however, there is absolutely no basis to conclude *a priori* that the “TOU Rate-to-Driver” will promote the twin goals of 1) encouraging EV adoption, and 2) promoting beneficial rather than harmful charging patterns.

The SAP explains that the charging services provider would be billed under the applicable commercial TOU rate, and that the “Provider will then deliver energy to drivers at the

¹⁷⁷ Exh. 01, Settlement Agreement, p. 10.

price per kWh reflected in the selected rate at that time.”¹⁷⁸ This language implies that the EV driver would pay a volumetric rate, even though many commercial TOU tariffs include demand charges. The settling parties clarified that the Provider “would be allowed to supplement this price [the volumetric rate] to recover any fixed or demand charges that are part of the rate schedule elected by the EVSP.”¹⁷⁹

Charging the EV driver the otherwise applicable TOU tariff may be good public policy, but whether it provides a benefit for reliability or costs depends on its influence *both* on EV adoption and charging behavior. In other words, there are at least two dimensions to the problem of “less costly service” due to EV charging. Even though it may seem paradoxical, merely ensuring that EV charging occurs “off-peak” does not necessarily result in net ratepayer benefits, if such a rate negatively impacts the demand for EVs or EVSEs.

EV charging could provide “less costly electrical service” for everyone if EV adoption is large enough that the increased electricity sales produce revenues in excess of utility costs to support EV charging. In that case, increased EV charging sales will contribute to fixed costs and reduce utility rates. However, PG&E has done no analysis to determine whether incremental increased load from the SAP or enhanced proposal would outweigh costs of implementation.¹⁸⁰

EV charging could minimize harmful impacts of increased load if charging occurs during off-peak rather than on-peak hours. Charging off-peak minimizes negative impacts on either generation costs¹⁸¹ or local distribution costs.¹⁸² Whether EV charging (without V2G or V1G capability) could actually provide “system benefits” by increasing load factors or absorbing excess renewable generation is a much more complex topic.

In the “workplace” or “commercial” scenario, the impact of a TOU rate is much more complicated and uncertain. Presumably, many such locations are primarily used during the day. Likewise, presumably many site hosts have an interest in promoting the use of parking spaces devoted to EV charging. The requirement to use a TOU rate may or may not conflict with these

¹⁷⁸ Exh. 01, Settlement Agreement, p. 10.

¹⁷⁹ Joint Settlement Parties Response to ALJ Questions, April 12, 2016, p. 2.

¹⁸⁰ Exh. TURN-53, p. 1.

¹⁸¹ On-peak (as defined by system or local capacity area demand) charging could increase the need for system or local generation capacity.

¹⁸² On-peak charging (as defined by circuit demand) could increase the need for distribution system upgrades.

incentives since commercial TOU rates provide the highest electricity prices during the day to avoid on-peak charging. To the extent that a TOU rate may conflict with the site host's goals, it could actually result in less EV charging infrastructure adoption and/or EVSE utilization.

For example, if a workplace operates only 8 am to 5 pm, and there are limited parking spots, the site host would presumably want EV owners to park in EV spaces only if they actually require charging, so as to reduce the need to allocate parking to EV chargers. But if a TOU rate passed through to the driver might dissuade drivers from charging between 12 and 5, the value of the dedicated EV space would be reduced, and the site host might be less inclined to install EV chargers.

TURN understands that there are pricing plans presently in place that provide for charging based on a flat rate, or based on some other factor that may even be unrelated to electricity consumption, such as "charging time."¹⁸³ These pricing plans reflect the fact that commercial charging infrastructure impacts other business decisions, such as allocation of parking spaces, that may have a strong impact on EV adoption.

The settling parties allege that TOU rates would provide "less costly electrical service due to improved integration of renewable generation."¹⁸⁴ The notion that TOU rates will promote renewable integration and reduce costs has no support in the record or in reality. The economic problems of renewable integration have to do with solar overgeneration during spring afternoons, increased dispatch costs due to renewable output forecast uncertainty on a day-ahead basis, and increased peaker dispatch costs and need for short-term ancillary services due to intermittency on a day-of basis. A TOU rate does nothing to address any of these issues.¹⁸⁵

TURN does not have an *a priori* position on whether a "TOU Rate-to-Driver" is desirable or not. TURN suggests that this is a valuable factual issue to explore in a real pilot. A better way to address this issue might be to provide for competitive pricing options, such as with the SCE pilot, and to measure the impacts of different billing plans on charging patterns and EV adoption.

¹⁸³ For example, Exh. 63, p. 21-22, Jones, ChargePoint;

¹⁸⁴ Exh. 01, Motion for Adoption of Settlement Agreement, p. 20, bullet point #4.

¹⁸⁵ TURN does not dispute that a TOU rate may result in more economic load consumption decisions versus a non-TOU rate, but that does not produce "less costly electrical service," it simply means costs will not go up as high as they otherwise could.

The conclusions of the settling parties that the mere use of a TOU rate to bill drivers will provide “less costly electric service” is unsubstantiated and may prove to be wrong.

3. The “TOU Rate-to-Host” Is Analogous to the Status Quo

The TOU Rate-to-Host option would charge the EVSE site host the otherwise applicable commercial TOU rate, but would allow the site host to charge the EV driver a different rate, as long as the site host incorporates some load management tactics. The load management tactics may include “charging curtailment during peak system usage, communications with drivers to voluntarily avoid or limit charging during peak system usage, or integration with other demand management technologies (such as stationary energy storage).”¹⁸⁶

The Rate-to-Host option essentially provides the site host with the opportunity to charge any other rate they choose, which is exactly the same situation as exists in the market today without the proposed utility program. TURN does not object to this outcome, but notes that it does not provide any incremental benefit beyond what happens in today’s competitive market.

As discussed above, the settling parties tout the multiple grid benefits of load management. However, it is important to note that a site host could completely satisfy the “load management” requirements by communicating with drivers “to voluntarily avoid or limit charging during peak system usage.” This is an extremely low bar that would be satisfied by having the site host provide a leaflet to any EV driver promoting charging off-peak. It certainly would not lead to any guaranteed benefits of changing consumption in response to hourly changes in wholesale market conditions, or in response to any distribution-level conditions.

Again, TURN is not necessarily criticizing the SAP for providing this rate option. TURN has concerns about any day-time charging exacerbating system or local demand and impacting the grid. For this reason, TURN generally supports programs and rates that promote night-time charging at home. The SAP does not in any meaningful way provide for “less costly” electricity service due to the “load management tactics” that may be employed by site hosts.

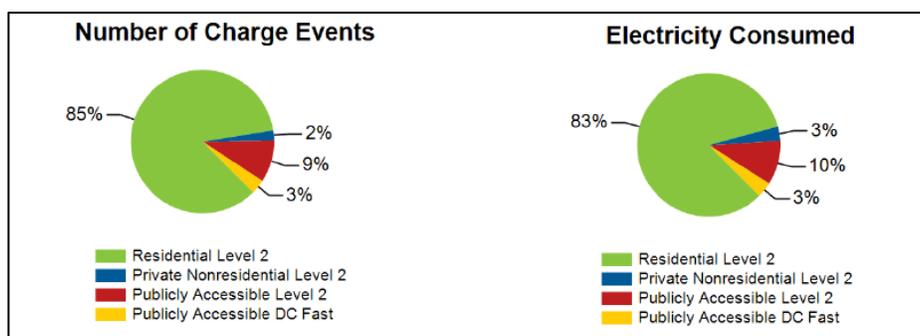
¹⁸⁶ Exh. 01, Settlement Agreement, Section 6, p. 10.

G. Market Segments

1. The Settlement Agreement Program should Focus on Multi-Unit Dwellings as Home Charging is Essential to Increase EV Adoption and has Experienced Less Private Investment than the Workplace Market Segment

EV drivers primarily charge their vehicle at home, as displayed in Figure 2. This is likely due to long charge times and the convenience of plugging in when an EV is parked overnight at the residence. American Honda's witness Harty agrees with this conclusion, stating in hearings that "home charging is the most important part of charging."¹⁸⁷ Coinciding with this trend, the cost of batteries that power EVs is likely to continue to decline and therefore range of EVs will increase without equivalent cost increases.¹⁸⁸ Recent announcements of new EVs with long ranges indicate this trend is already occurring. For example, the Chevy Bolt by General Motors, was recently announced and is expected to have over 200 miles of range at a cost of around \$30,000,¹⁸⁹ and Tesla's Model 3 is expected to have a similar range and cost \$35,000 before state and federal rebates; production is rumored to begin in 2017.¹⁹⁰

**Figure 2: 2013 EV Project Data
Charge Events and Electricity Consumed at Residences¹⁹¹**



¹⁸⁷ 4 RT 463: 9-10, Harty, Honda.

¹⁸⁸ Exh. TURN-59, p. 7: 6-10, & p. 8, Figure 3.

¹⁸⁹ Exh. TURN-59, p. 7: 7-9, referencing PEV Collaborative, General Motors Presentation, March 2015.

¹⁹⁰ Exh. TURN-59, p. 7, Figure 2, referencing Stephen Edelstein, GreenCarReports, September 24, 2015, http://www.greencarreports.com/news/1100183_tesla-model-3-will-benefit-from-lowest-battery-costs-of-any-maker-jefferies.

¹⁹¹ Exh. TURN-59, p. 7, referencing Idaho National Laboratory, EV Project Electric Vehicle Charging Infrastructure Summary Report, July 10, 2014, p. 1. Statistics for January through December 2013.

Further, there is evidence that the competitive market has successfully installed chargers at workplaces,¹⁹² while there is evidence of the need for investment in MUDs. Installation of charging stations at workplaces is generally less challenging and less costly than at MUDs. Workplace charging is more widespread than charging at MUDs as noted by ChargePoint witness Quinn who recommended that PG&E's program focus on MUDs:

PG&E should not prioritize locations that are already demonstrably willing to privately finance all or most of the cost of EV charging to achieve commercial and private objectives. In the Bay Area, MUDs continue to be a challenge due to the unwillingness of landlords and property management companies to assist with often costly electrical upgrades.¹⁹³

Ratepayer-funded charging infrastructure should be prioritized to the MUD market which is the least developed and provides the greatest potential for increasing EV adoption.

2. The in Multi-Unit Dwelling Minimum Deployment Requirement in the Settlement Agreement should be Increased

As TURN pointed out in testimony and as discussed in Section V.A.3.b, EV drivers primarily charge their vehicles at home, and increased EV battery ranges will mean a large majority of drivers will be able to meet their charging needs overnight at their residence.¹⁹⁴ This is consistent with the findings of the Electric Power Research Institute ("EPRI"), which concluded that "the need for secondary infrastructure is quite low for most drivers".¹⁹⁵

The fact that EV battery ranges are increasing drastically highlights the ratepayer risk of stranded costs and underutilized assets presented by the SAP. This risk is exasperated by the fact that the Settlement Agreement proposes a program that will "target" MUDs and workplaces but only commits to deploying 20% of the chargers at MUDs¹⁹⁶, the location type that needs investment and is most likely to result in EV adoption. It is important to remember that investments in charging infrastructure are long-term which highlights the need for targeted deployments at location types that drive EV adoption and will continue to be used throughout the useful life of the equipment. Accordingly, the minimum deployment mandate for MUDs should

¹⁹² Exh. ChargePoint-63, p. 11:2-8, Jones.

¹⁹³ Exh. ChargePoint-64, p. 22:6-10, Quinn.

¹⁹⁴ Exh. TURN-59, pp. 6-10.

¹⁹⁵ Exh. TURN- 49, pp. V & 1-2.

¹⁹⁶ Exh. Joint Settling Parties-01, p. 4.

be increased to at least 50% of all deployment sites, especially if a larger program than the compliant proposal is approved.

H. Disadvantaged Communities Proposal

1. The Settlement Agreement Disadvantaged Communities Proposal is Flawed

The definition of DACs under the SAP is broader than was originally proposed in PG&E's compliant and enhanced proposals. Under the SAP, the DAC definition includes the top quartile of Disadvantaged Communities identified by CalEnviroScreen 2.0 on a PG&E service territory basis and areas identified in the settlement that have a high concentration of customers eligible for PG&E's CARE program.¹⁹⁷ According to Appendix D of the settlement agreement a "high concentration of customers eligible for PG&E's CARE program" means the top 25% of census tracts for CARE enrollment (high CARE concentration).

TURN supports the settlement agreement's commitment to install 15% of the charging stations in disadvantaged communities and to pursue an additional 5% stretch goal. However, TURN is concerned about the full waiver of the participation payment for all sites in DACs, including the high CARE concentration areas. As was discussed in evidentiary hearings, this facet of the SAP could result in very wealthy companies receiving 100% ratepayer subsidized charging infrastructure. For example, companies such as Google, Twitter, LinkedIn, Hotwire and Uber all have their corporate headquarters located in areas defined as DACs under the SAP,¹⁹⁸ and even PG&E's witness Corey admitted that pursuant to the SAP these companies would be eligible for completely free charging equipment.¹⁹⁹

The DAC proposal in the SAP is problematic and inequitable for many reasons. First, PG&E customers, especially those in the small business and residential customer classes should not subsidize large and lucrative companies. Second, these companies have the resources to install EV charging equipment, so every program dollar spent on equipment at those locations means another location that may not have the means or motivation to install EV charging

¹⁹⁷ Exh. Joint Settling Parties-01, p. 12.

¹⁹⁸ Exh. TURN-42, p. 1.

¹⁹⁹ 3 RT 260: 2-4, Corey, PG&E: "Q. So Google would be eligible then for free charging stations; is that right? A. Yes."

equipment but for the program, will not be able to participate.

Also, it appears PG&E and the settling parties did not fully evaluate the potential ramifications of the DAC proposal before including it in the SAP. For example, while the panel of settling party witnesses claimed to have looked at the maps of DACs produced under the definition, none of them actually considered the type of businesses located in these areas.²⁰⁰ The fact that large portions of the Financial District, South of Market, and Union Square/Downtown neighborhoods in San Francisco, and parts of Mountain View, the heart of the Silicon Valley, appear as DACs on the maps should have raised alarm bells to even a casual observer, let alone the program administrator.²⁰¹ Further, when asked if PG&E considered the fact that the expanded CARE definition could include some census tracts with a low number of residential units and high commercial real estate values, PG&E admitted that it “wasn’t one of the explicit conditions that we looked at.”²⁰²

2. The Commission should Modify the Disadvantaged Communities Proposal in the Settlement Agreement and should Implement TURN’s DAC Proposals

The Commission should modify the DAC proposal to limit the participation payment waivers for DAC sites to MUDs only. There are too many examples of wealthy workplaces located in DACs and PG&E has not presented any evidence that it is willing and capable of distinguishing between well endowed workplaces and those who would not install charging stations but for the program. Further, when asked if they would consider modifying the DAC proposal to limit the participation payment waiver to MUDs located in DACs, the settling parties declined and stated they stand by the DAC designations in the SAP.²⁰³

Another concern regarding the DAC designation in the SAP is the proposal to set aside \$5 million of the program budget for “additional equity programs supporting Disadvantaged Communities.”²⁰⁴ While TURN is not necessarily opposed to a using a portion of the SAP

²⁰⁰ 2 RT 26: 2-8, Espino, Greenlining, Settling Parties Panel.

²⁰¹ Exh. Joint Settling Parties-01, Appendix D; Joint Response to the ALJ’s March 29, 2016 Ruling, Part 3 of Attachment A (DAC Map of Bay Area); & Exh. TURN-41, pp. 1-5.

²⁰² 5 RT 484: 16-22, Almeida, PG&E.

²⁰³ 2 RT 30: 8-26, Baumhefner, NRDC, Settling Parties Panel.

²⁰⁴ Exh. Joint Settling Parties-01, p. 12.

budget for equity programs, the Commission should not approve such an expenditure until PG&E provides a detailed plan for how the funds will be spent. In hearings, PG&E's expert witness on DAC issues admitted that "we haven't developed these programs yet."²⁰⁵ Further, PG&E plans to offer these equity programs to sites identified under the expanded DAC definition and PG&E has not determined the eligibility requirements for these programs yet.²⁰⁶ Therefore, it is possible that wealthy companies located in DACs could also take advantage of these programs. The Commission should reject the SAP DAC \$5 million set aside proposal, at least until the details of the proposal are provided. At the very least, the Commission should mandate income eligibility requirements for any additional "equity programs" in order to insure they are actually benefiting low-income people and communities.

In lieu of adopting the undefined \$5 million equity program set aside in the SAP, the Commission should adopt TURN's proposal to use low carbon fuel standard ("LCFS") revenue to provide rebates to low-income individuals for EVs. In testimony, TURN proposed that PG&E use revenue from the sale of LCFS credits to provide a "one-time, up-front rebate...when a plug-in electric vehicle is sold," as authorized by the Commission in D.14-12-083.²⁰⁷ In this decision the Commission noted significant advantages to this approach:

Of all the options for returning LCFS revenue, a one-time rebate is likely the best means to encourage PEV adoption because it would be provided to all PEV buyers as an up-front amount off the purchase of the EV. Moreover, some of the revenue could be provided to auto sales personnel, providing extra motivation to sell EVs.²⁰⁸

Under TURN's proposal, a portion of LCFS funds would be set aside in the context of PG&E's pilot program and distributed as a \$3,000 upfront rebate for CARE enrolled customers residing in DACs that purchase or lease an EV. PG&E should maintain enough funds to provide rebates to 250 low-income EV adopters living in DACs, equal to \$750,000.²⁰⁹ The availability of

²⁰⁵ 5 RT 479: 24-28, Almeida, PG&E

²⁰⁶ 5 RT 482: 2-15, Almeida, PG&E

²⁰⁷ D.14-12-083, Decision Adopting Low Carbon Fuel Standard Revenue Allocation Methodology for the Investor-Owned Electric and Natural Gas Utilities, December 18, 2014, p. 51.

²⁰⁸ *Id.*, at p. 28.

²⁰⁹ This is based on 10% of the proposed number of chargers that will be deployed in disadvantaged communities under the compliant proposal (2510*.1 = ~250)*\$3,000 = \$750,000.

these rebates in addition to other state programs should be extensively marketed to MUDs in low-income DACs targeted for charging station deployment. The Commission should adopt TURN's proposal because it goes further than the DAC proposal in the SAP to addressing the primary barrier to EV adoption for low-income consumers, the upfront cost of the vehicle. TURN's proposal has the added benefits of not increasing the overall program costs to ratepayers and the CARE enrollment requirement ensures that the benefits of this program will actually flow to low-income individuals.

I. Coordination With Distribution Resource Plans

Vote Solar states that PG&E should, at a minimum, “include using the results of the ICA [integration capacity analysis] and optimal location analysis from their DRP process as criteria for the site selection process.”²¹⁰ While tools from the DRP are still being developed, TURN agrees that hosting capacity estimates as well as traditional distribution planning tools should be leveraged to minimize distribution upgrade costs and provide for system level benefits. This may include the availability of lower power L1 chargers if hosting capacity on a particular circuit is low²¹¹ and load management tools (e.g. V1G and demand response). While the SAP states that the program will “leverage” the DRP,²¹² the proposal lacks specific criteria regarding how this will be accomplished. TURN recommends the language reflect utilization of the DRP to “minimize distribution upgrade costs and maximize system-level benefits.” Data should be collected on whether/how this is accomplished during PG&E's Phase 1 pilot.

Further, TURN disagrees with the SAP's assertion that utilizing the ICA will create “more reliable electric service” to satisfy provisions under PUC Section 740.8(a).²¹³ Under any normal interconnection process the distribution system must have sufficient capacity to accommodate increased load. However, the ICA will be useful to identify sites or locations in advance where distribution system upgrades are not necessary or cost less in comparison to other sites. TURN is interested in collecting data in Phase 1 on the specific expenditure necessary for distribution upgrades, how these compare with PG&E's budget estimates, and whether PG&E

²¹⁰ Exh. VoteSolar-181, p. 10 (Baak).

²¹¹ Exh. TURN-51, pp. 18-19 (Borden) discuss grid benefits of lower power charging infrastructure.

²¹² Exh. Joint Settling Parties-01, p. 10.

²¹³ Exh. PG&E-01, p. 3.

has minimized distribution costs and maximized the benefits of EV charging using tools being developed in the DRP.

J. Education And Outreach

PG&E proposes an extensive and costly education and outreach (“E&O”) program that has not been significantly modified by the proposed settlement. TURN has not focused primarily on E&O issues but notes that PG&E’s costs are very high and PG&E has not sufficiently justified the need for such activities. For the compliant proposal, PG&E proposes to spend approximately \$14.5 million on “Site Acquisition Support and Market Education and Outreach”²¹⁴ and approximately \$19 million under the enhanced proposal.²¹⁵ For the compliant proposal, PG&E proposes to spend almost 17% of the total program costs on E&O. TURN questions the reasonableness and the value to ratepayers provided by such an expensive E&O program.

Some of the E&O activities and tools proposed by PG&E appear to be duplicative of existing statewide, regional, and federal EV E&O efforts. One example of a duplicative tool, also discussed in Section A.2.a, is PG&E’s EV cost of ownership toolset which has a total cost (capital, expense and O&M) of almost \$2 million. In hearings, TURN presented evidence that over ten publicly accessible EV cost of ownership tools already exist.²¹⁶ Further, when PG&E witness Della Penna was asked about the existing EV cost of ownership tools, he admitted that PG&E already has a EV cost of ownership tool that is used at its call centers and provides specific cost information to customers based on their energy usage.²¹⁷ It is unclear why PG&E’s existing tool is insufficient and PG&E has not presented sufficient evidence to justify this significant expenditure of ratepayer funds.

PG&E has not presented a compelling case that its proposed E&O program is necessary, cost-effective, or will benefit ratepayers. The Commission should scrutinize PG&E’s E&O proposals and only approve expenditures that are necessary for the implementation of the program and that are not duplicative with existing statewide EV E&O efforts.

²¹⁴ Exh. PG&E-03, p. 9, Tables 1 & 2.

²¹⁵ *Id.* at pp. 14-15, Tables 4 & 5.

²¹⁶ Exh. TURN- 46.

²¹⁷ 5 RT 493: 25-28 & 494:1-3, Della Penna, PG&E.

K. Coordination and Collaboration With CCAs

TURN does not offer any recommendations on this issue at this time, but may reply to suggestions made by other parties.

L. Monitoring, Data Collection, and Reporting

There are currently many gaps in knowledge and understanding regarding the implementation and effectiveness of utility charging infrastructure programs. Data collection pursuant to the phase 1 program is therefore critical to inform a phase 2 program that can cost-effectively impact EV adoption and fill gaps in necessary charging infrastructure.

While Appendix B of the SAP provides a good start for data collection in the Phase 1 program, the settlement neglects two critical areas of data: 1) EV Adoption attributable to PG&E's program, and 2) the impact of the program on the private market and EV infrastructure development *outside* of the program. Further, while Appendix B of the SAP states that "The PAC will have the flexibility to determine if additional data collection and reporting objectives are of interest and will help to inform Commission policy"²¹⁸ TURN strongly urges the Commission be as specific as possible regarding data collection requirements because, as discussed in Section V.M, the PAC as proposed, will have no formal authority to make revisions to PG&E's data collection efforts.

Appendix B of the SAP states that it will track "EV Adoption in Service Territory" and "Insights on Effect of the program on the EVSE and EV market." While TURN agrees that EV adoption in the territory should be tracked (and already is by PG&E), the utility should also collect more granular EV adoption statistics that will help parties and the Commission assess adoption *pursuant to the utility's program*. TURN reiterates its specific recommendations stated in opening testimony: 1) more granular EV adoption statistics, such as by county or census tract of where infrastructure is deployed, and 2) surveys administered by site hosts to assess how many purchases of EVs occur due to the program.²¹⁹

Further, the SAP's statement that the utility will provide "insights" on the EVSE and EV market is inadequate. This will likely lead to PG&E making broad declarative statements, most

²¹⁸ Exh. Joint Settling Parties-01, p. 21.

²¹⁹ Exh. TURN-59, p. 23: 4-7 (Borden).

likely beneficial to its position, that give no understanding of how the program has impacted market participants. The utility should include, but not be limited to, the following pieces of information as part of quarterly, annual, and/or final reporting metrics:²²⁰

- The total number, company names, and types of charging station equipment that qualify for PG&E’s program;
- The total number, company names, and types of network operators that qualify for PG&E’s program;
- The total number, company names, and types of charging station equipment available in PG&E’s territory that do not qualify for PG&E’s program;
- The growth in number and percentage terms of charging station infrastructure prior to and during PG&E’s program implementation not including infrastructure installed as part of PG&E’s program;
- Letters, phone calls, and anecdotal complaints from EVSE vendors pursuant to PG&E’s program and whether/how PG&E has addressed these complaints.

M. Advisory Council

The proposed Program Advisory Council (“PAC”) lacks any real oversight authority and is not a sufficient substitute for a phased approach. Appendix A of the Settlement Agreement lists the Roles and Responsibilities of the PG&E PAC, and states, “the key role and purpose of the PAC will be to provide input to PG&E for programmatic changes as needed during the course of the PG&E Program. . . .”²²¹ While this sounds promising, further review of the “Roles and Responsibilities of the PG&E PAC” shows that “the PAC does not have formal decision-making authority.”²²²

Further, according to Appendix A, the PAC will only meet twice a year and can make recommendations to PG&E. Accordingly, the PAC lacks the ability to suggest program modifications directly to the Commission and thus it is solely up to PG&E to propose any program adjustments. TURN’s experience with the other two utilities’ EV infrastructure program PACs, while valuable, have shown the limitations of these informal groups to implement specific

²²⁰ Data that is confidential to market participants may be submitted to non-market parties including Energy Division under a non-disclosure agreement.

²²¹ Exh. Joint Settling Parties-01, Appendix A.

²²² *Id.*

recommendations by outside parties.²²³ The “Roles and Responsibilities” for SDG&E and PG&E’s PACs are nearly identical so TURN expects to encounter similar limitations participating in the PG&E PAC. It should not be left up to PG&E to monitor and evaluate the success of the SAP, which is why the initial phase of PG&E’s program should be limited in size and scope.

N. Guiding Principles

The settlement agreement proposes to utilize the same guiding principles “provided in the SDG&E settlement in A.14-04-014 and approved by the Commission in D.16-01-045.”²²⁴ TURN is generally not opposed to these guiding principles and offers limited revisions and additions to the guiding principles listed in Section 2 of the settlement agreement that are primarily based on the guiding principles from the SCE settlement, adopted in D.16-01-023.²²⁵

- Revise principle #10 to include the SCE principle of providing “representative data (e.g., by different market segments, across disadvantaged communities, load management strategies, and pricing models) to allow for meaningful evaluation and comparisons, and to inform Phase 2 and future EV policy.”
- Revise principle #7 to include the SCE principle requiring “Market Neutral Customer Engagement.”
- Revise principle #3 to include “protect ratepayers by reducing the risk of stranded costs to the greatest extent possible.”

O. Cost Recovery, Cost Allocation, Management, and Transition Mechanism

1. The Bridge Funding Proposal in the Settlement Agreement Significantly Increases Program Costs and should be Rejected

Under the terms of the settlement agreement, the SAP will run for three years and it maintains the bridge funding proposal detailed in PG&E’s supplemental testimony.²²⁶ Accordingly, the SAP could run for four years and cost over \$200 million.²²⁷ The Settlement

²²³ For example, as noted in TURN’s Protest to Advice Letter 2886-E, none of TURN’s recommendations regarding the level or structure of SDG&E’s participation payment were adopted in the utility’s request.

²²⁴ Exh. 1, Joint Settling Parties-01, p.12.

²²⁵ D.16-01-23, p. 8.

²²⁶ Exh. Joint Settling Parties-01, pp. 13-14.

²²⁷ Exh. Joint Settling Parties-01, Appendix E. PG&E did not include cost workpapers for the bridge proposal so TURN’s analysis is based on the following assumptions. The Settlement

Agreement states that if PG&E has not received a decision from the Commission regarding Phase 2, “PG&E will file a Tier 2 Advice Letter to authorize bridge funding to extend the program for up to 1 year or until a decision is reached.”²²⁸ PG&E knows it is unlikely the Commission will issue a decision on its phase 2 proposal within 6 months of filing the application, thus PG&E has created a backdoor to significantly increase the size of its phase 1 infrastructure program, which effectively defeats the purpose of phasing.

The Joint Motion states that bridge funding is necessary to “prevent economic harm to contractors and disruption to program implementation.”²²⁹ While TURN appreciates that a disruption in program implementation may be inconvenient, it is necessary under these circumstances. The Commission must evaluate the results of phase 1 and determine whether ratepayer subsidized EV infrastructure has resulted in benefits to PG&E’s ratepayers and the transportation system before evaluating and approving a much larger phase 2 program. The Commission should deny the SAP bridge funding proposal to significantly increase the overall program budget. TURN recommends that any remaining funds at the end of the two-year program term be used during the transition or bridge period.

2. TURN Supports the Use of a One-Way Balancing Account and Cost Cap as Proposed in the Settlement Agreement but the Program Costs Should also be Subject to a Reasonableness Review

The settlement agreement states:

The costs of Charge Smart and Save will be recovered in accordance with the cost recovery and rate design proposal in Chapter 7 of PG&E’s February 9, 2015, prepared testimony.²³⁰

Agreement proposes to restrict “the bridge funding to the average monthly cost and deployment rate of the Program for the previous 12 months of Charge Smart and Save program.” Assuming year 3 is the “12 month” proxy used to determine the cost and deployment rate for the bridge period, the year 3 program costs should be added to the 3-year total program cost (\$160,323,728). Appendix E lists the program costs for year 3, 2019 at \$54,144,371, not including contingency costs. Thus the approximate total program cost including a year of bridge funding: $\$160,323,728 + \$54,144,371 = \$214,468,099$.

²²⁸ Exh. Joint Settling Parties-01, pp. 13-14.

²²⁹ *Id.* at pp. 16-17.

²³⁰ *Id.* at p. 8.

PG&E proposes to establish a one-way balancing account to recover the costs of its EV infrastructure program²³¹ up to the cost cap for the SAP.²³² TURN supports these aspects of the cost recovery proposal and urges the Commission to require a one-way balancing account and cost cap regardless of the size and structure of the EV program it approves.

PG&E also proposes that once a review of its forecast costs is completed in the application process “actual costs incurred for the EV Program and recorded to the EVPBA that are at or below the cost cap should be found reasonable.”²³³ TURN does not disagree with the reasonableness of the forecast costs though unit costs appear high, but there must be a mechanism to review the reasonableness of the actual costs in the event they are significantly different than the forecast costs.

According to TURN’s analysis, the program budget includes sufficient headroom to install the proposed amount of charging stations but there is always the risk that implementation costs will be much higher than anticipated. In evidentiary hearings, it was clear that many unknowns remain regarding program implementation and the potential for higher than expected installation and implementation costs exists which could result in considerably fewer charging stations installed for the program budget than proposed. According, TURN recommends that the Commission adopt a mechanism to ensure PG&E does not spend the authorized amount but install far fewer charging stations, thus defeating the apparent purpose of the program and resulting in unreasonable rates. Two potential mechanisms that could be adopted are a minimum deployment requirement²³⁴ or a mid-course reasonableness review of the program costs.

P. Safety

The provision of safe and reliable service is a fundamental duty of all regulated utilities. Ensuring that PG&E’s EV charging infrastructure program is administered and implemented in a way that complies with this duty is essential. However, utility ownership of all equipment

²³¹ Exh. PG&E-02. p. 7-5: 19-20.

²³² Exh. Joint Settling Parties-01, p. 4.

²³³ Exh. PG&E-02. p. 7-5:22-25.

²³⁴ From a ratemaking perspective this means PG&E would have to complete the prescribed minimum number of charging stations with shareholders bearing responsibility for any costs exceeding the adopted program budget.

installed pursuant to the program is not a necessary prerequisite to ensure the safe and reliable service. PG&E witness Corey agreed with this rationale in evidentiary hearings, noting that the benefits of utility ownership of “safety, reliability, operations and maintenance” can be accomplished without utility ownership.²³⁵ As was discussed above in Section V.B.2, as the administrator of a make-ready program, PG&E can ensure that all equipment installed is safe and meets pre-determined specifications and that all work done is by licensed and certified staff.

TURN recommends that the Commission adopt the follow safety requirements, which were also required in the Decision on SCE’s Charge Ready Program.²³⁶ TURN notes that these safety requirements are very similar to those proposed in the settlement agreement.²³⁷

- All construction, installation, and maintenance of customer participant site infrastructure that is not performed by employees of SCE will be performed by contractor’s signatory to the International Brotherhood of Electrical Workers (IBEW) who hold a valid California C-10 contractor’s license.
- To ensure that contractors install electric vehicle infrastructure safely, the electricians must receive certification from the Electric Vehicle Infrastructure Training Program.

VI. OTHER ISSUES

TURN does not offer recommendations regarding other issues at this time, but may reply to suggestions made by other parties.

VII. CONCLUSION

The Commission should reject the Settlement Agreement because it is not reasonable or in the public interest and for all of the reasons detailed above. The Commission should, instead, authorize PG&E to implement a program with the size and scope of the compliant proposal and should also include the program modifications recommended by TURN in Section III.A.2.

²³⁵ 4 RT 295: 14-19, Corey, PG&E.

²³⁶ D.16-01-023, pp. 47-48.

²³⁷ Exh. Joint Settling Parties-01, p. 6.

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Respectfully submitted,

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