

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

Order Instituting Rulemaking to Continue
the Development of Rates and
Infrastructure for Vehicle Electrification.

Rulemaking 18-12-006
(Filed December 13, 2018)

**JOINT OPENING COMMENTS OF THE VEHICLE-GRID INTEGRATION COUNCIL,
AMERICAN HONDA MOTOR CO., INC., ENEL X NORTH AMERICA, INC.,
ADVANCED ENERGY ECONOMY, CALIFORNIA ENERGY STORAGE ALLIANCE,
ENVIRONMENTAL DEFENSE FUND, EVBOX NORTH AMERICA, GREENLOTS,
NATURAL RESOURCES DEFENSE COUNCIL, AND SIEMENS ON PROPOSED
DECISION CONCERNING IMPLEMENTATION OF SENATE BILL 676**

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I. INTRODUCTION.

In accordance with Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the Vehicle Grid Integration Council¹ provides these opening comments on behalf of its members and supporters, and jointly with American Honda Motor Co., Inc., Enel X North America, Inc., Advanced Energy Economy, California Energy Storage Alliance, Environmental Defense Fund, EVBox North America, Greenlots, Natural Resources Defense Council, and Siemens (“Joint Commenters”) on the *Proposed Decision Concerning Implementation of Senate Bill 676 and Vehicle-to-Grid Integration Strategies* (“PD”)² issued on November 13, 2020.

¹ VGIC member companies and supporters include American Honda Motor Co., Inc., Connect California LLC, Enel X North America, Inc., Fermata, LLC., Fiat Chrysler Automobiles, Ford Motor Company, General Motors Company, Nissan North America, Inc., Nuvve Corporation, The Mobility House, and Toyota Motor North America, Inc. The views expressed in these Comments are those of VGIC, and do not necessarily reflect the views of all of the individual VGIC member companies or supporters. (<https://www.vgicouncil.org/>).

² Joint Commenters note that the Commission appears to have made an error in the title of this PD that should be corrected for the sake of clarity and accuracy – rather than “vehicle-to-grid integration strategies” the Commission should reference “vehicle-grid integration strategies” as vehicle-to-grid (“V2G”) is a discrete sub-topic to VGI more broadly.

II. THE PD REPRESENTS A STRONG FOUNDATION BUT LACKS CRITICAL DIRECTION AND ACCOUNTABILITY MEASURES TO ENSURE VGI STRATEGIES ARE IMPLEMENTED.

Joint Commenters commend the Commission, Energy Division staff, and stakeholders for their efforts leading up to the PD. The year-long Vehicle-Grid Integration Working Group (“VGI WG”) effort and *Final Report*, the August 2020 Energy Division Staff Paper on *Vehicle Grid Integration (“VGI”) Implementation*, and the *Draft Transportation Electrification Framework*, reflect significant stakeholder work and engagement, and Joint Commenters are generally pleased to see party recommendations referenced and adopted, including the key VGI WG *Final Report*. Joint Commenters believe the PD represents a strong foundation for VGI and applauds the Commission for adopting VGI strategies pursuant to SB 676 (Bradford, 2019) and the Commission’s authority to advance VGI generally under this rulemaking and SB 350 (De Leon, 2015). However, while a step in the right direction, the PD will benefit from additional specificity, direction and accountability as to how stakeholders can assure California’s success in carrying forward VGI objectives which align with State policies and Orders. Joint Commenters suggest that the Commission provide more clarity in several of the ordering paragraphs and include more concrete next steps to advance VGI. Specific recommended revisions are provided in the following section.

III. RECOMMENDED REVISIONS.

(Note that Joint Commenters have compiled all recommended redlines to the PD in Appendix A.)

A. Ordering Paragraph (“OP”) 4 should include a date certain by which investor owned utilities (“IOUs”) must propose Automated or Active Load Management (“ALM”) deployment strategies, and require the inclusion of a tariff design and methodology.

Joint Commenters appreciate the PD’s consideration of ALM technologies as an alternative to often costly distribution system upgrades for electric vehicle (“EV”) charging stations and a critical VGI strategy. As reflected frequently in the record of this proceeding, enabling customers to elect ALM and implement solutions from an open marketplace will likely result in distribution

system cost savings both within transportation electrification (“TE”) infrastructure programs and more generally, which will introduce novel classes of ratepayer benefits.³

The PD correctly directs the IOUs to consider ALM capabilities in all future rules, tariff filings, and TE applications – reflecting the PD’s guidance to consider VGI across all relevant business activities – and also to determine criteria to evaluate where ALM would benefit ratepayers while still meeting site host charging needs. This is timely, given the direction under AB 841 (Ting, 2020) for the IOUs to file, by February 28, 2021, “a new tariff or rule that authorizes each electrical corporation to design and deploy all electrical distribution infrastructure on the utility side of the customer’s meter for all customers installing separately metered infrastructure to support charging stations, other than those in single-family residences.”

Joint Commenters believe that OP 4 should be amended to explicitly harmonize the implementation of ALM with the IOUs’ near-term proposal for a utility-side distribution infrastructure tariff under AB 841. ALM could be considered as an accompaniment to the forthcoming AB 841 tariff, or through a standalone ALM tariff, as a standard component of routine utility-side infrastructure service for EV charging. The ALM offering should be structured to return a portion of the avoided cost of ratepayer funded customer- or utility-side infrastructure to the customer as an incentive to encourage the use of ALM as a cost-effective measure that delivers net ratepayer value and lowers the cost of EV supply equipment (“EVSE”) investments. As an example of how an ALM tariff could be structured, customers that seek to install new charging stations could be provided, in advance, with an optional ALM rider that includes a site-specific schedule of options based on the required secondary distribution upgrades at various levels of maximum EV charging capacity. The schedule would also include a customer rebate or rate discount computed using a predetermined methodology, to incentivize the use of ALM in lieu of electing distribution upgrades. Customers could then elect from the

³ See, for example, Joint Commenters opening comments at 8-9, VGI WG recommendations 2.04 and 2.17, *Pacific Gas and Electric Company Electric Vehicle Infrastructure OIR Rulemaking 18-12-006 Data Response* October 13, 2020, CALSTART Opening Comments on the Draft Transportation Electrification Framework (“Draft TEF”) Section 11 at 4, and Draft TE Framework at 23. It is worth noting that the value of ALM in avoiding or deferring distribution system upgrade costs is a common experience in TE planning, including in Europe. See, for example, *The future for heavy-duty vehicles in the Pentalateral Region: Integration electromobility in the energy transition*, October 22, 2020, <https://www.irena.org/events/2020/Oct/Heavy-Duty-Vehicles-in-the-Penta-Region>

schedule of options an appropriate level of ALM (including no ALM, if the customer wishes to enable charging at full nameplate capacity).

% of Nameplate Rating (maximum under ALM)	Maximum kVA rating of EVSE under ALM (total / per port @ 20 total)	Required Distribution Upgrade/Make Ready Costs	Rebate amount // rate discount
100% (default, no ALM)	200 / 10	\$200,000	\$0
90%	180 / 9	\$200,000	\$0
80%	160 / 8	\$150,000	\$25,000
70%	140 / 7	\$150,000	\$25,000
60%	120 / 6	\$150,000	\$25,000
50%	100 / 5	\$100,000	\$50,000

These ALM tariff concepts are equally applicable to ratepayer-funded IOU TE programs that fund customer-side infrastructure as they are to utility-side infrastructure that will become a routine IOU service. However, in order to maximize the ratepayer benefits of ALM – not to mention VGI broadly⁴ – the Commission, through its TE programs and practices, should seek to encourage incorporating EV charging into existing sites’ service drops and building loads to the greatest extent possible. Indeed, new and separately metered service will in many instances be a necessary and cost-effective measure to bring new EV charging load online. But, in many other instances, sites have adequate transformer, panel, and wires capacity to accommodate EV charging, or ALM can be used to incorporate new charging load within the available capacity that the site already has. As such, we recommend that OP 4 is amended to explicitly reference how ALM can be used to support TE installation at equal or lesser costs than hardware-based electrical capacity “at an existing utility service.” Finally, the PD should also be revised throughout to make it more explicit that ALM measures can be provided by third parties as long as they meet relevant technical and safety standards. Joint Commenters recommend revisions to OP 4 and Finding of Fact 13 are presented in Appendix A.

⁴ For instance, intermingling EV charging load with building loads is necessary to enable V2G participation in Demand Response offerings that, as currently structured, allow for reducing a site’s load but prohibit exporting power to the grid.

B. The Commission should include more specific direction on how and when a credit-for-export scheme should be pursued.

Regarding the credit-for-export concept, the PD states “exploration of such a scheme should be pursued.”⁵ However, other than this generally supportive statement, there are no specific actions that would lead to tangible next steps needed for the IOUs and other stakeholders to pursue this option. Joint Commenters request the Commission revise the PD to clarify this statement, specifically regarding how the concept should be pursued, by when, and in which proceeding – as well as metrics that enable measurement of successful strategy implementation. The PD mentions the current Net Energy Metering (“NEM 3.0”) proceeding (R.20-08-020) as a potential venue to explore compensation mechanisms for EV exports; however a recent Scoping Ruling issued in that proceeding – issued after the PD in this proceeding – does not currently include consideration of exports from EVs in its scope.⁶ Furthermore, given the potentially contentious nature of the NEM 3.0 proceeding and its predominant focus on rooftop solar PV, the Joint Commenters are concerned that this will not be a productive venue for exploring a novel credit for export mechanism related to EVs. Instead, Joint Commenters recommend, based on the status of the current NEM proceeding, that the PD be revised to direct meaningful action towards a credit-for-export scheme. Specifically, we recommend including an additional ordering paragraph requiring IOUs to issue an application within 180 days for a credit-for-export tariff for residential customers that is time variant - an EV time-of-use (“TOU”) rate - and allow for stakeholder comment. Additionally, we recommend the Commission introduce methods which incorporate Carbon Intensity metrics to substantiate rational value for export episodes based on carbon savings directly resulting from VGI dispatch.

C. OP 8 should be revised to ensure continued progress towards VGI participation as Demand Response (“DR”) resources beyond the proposed workshop in Q1, 2021. Joint Commenters recommend targeting a pathway towards 200 MW of VGI in the 2023-2027 DR portfolio cycle.

Regarding the near-term VGI policy action of DR, the PD states, “incorporating VGI strategies into any existing [DR] program may require education for potential market participants

⁵ PD at 31.

⁶ See *Joint Assigned Commissioner’s Scoping Memo and Administrative Law Judge Ruling Directing Comments on Proposed Guiding Principles* issued in R.20-08-020 on November 19, 2020.

and consideration of whether the program design could accommodate VGI strategies.”⁷ Joint Commenters appreciate the Commission’s efforts to ensure market participants are well-informed. However, Joint Commenters believe the finite resources of the IOUs and stakeholders may be better spent on a solutions-oriented workshop, which would briefly summarize known barriers to behind-the-meter DR participation (e.g. metering requirements, baselining, and availability requirements) and devote most of the agenda to identifying potential strategies to overcome these barriers. Joint Commenter’s primary concern with section 6.3 on DR and the corresponding OP 8 is the lack of action required following the post-workshop report. As such, Joint Commenters strongly urge the Commission to direct a more concrete set of actions following the workshop. More specifically, we believe the proposed post-workshop report should include an explanation of a viable pathway for enabling 200 MW of VGI as DR resources within the next DR portfolio cycle (2023-2027) by alleviating barriers to the extent possible. Joint Commenters strongly believe this could send a strong market signal and, ultimately, lead to greater VGI participation in DR programs and market products. The Joint Commenters believe 200 MW is a reasonable starting point given the fact that the current 2018-2022 cycle DR portfolios already contain over 1,600 MW of demand response resources (~550 MW for PG&E, ~1,000 MW for SCE, and ~60 MW for SDG&E in 2022). Additionally, VGIC recently estimated the potential for up to 1,500 MW of VGI DR resources by 2025 even at a modest 5% participation level.⁸ Finally, the Joint commenters recommend that final decision direct any VGI DR workshop also be jointly noticed to the Emergency Reliability rulemaking (R.20-11-003) and Resource Adequacy rulemaking (R.19-11-009). To that end, we suggest OP 8 be modified per Appendix A redlines.

D. OP 11 should be revised to specify how to develop pathways to scale implementation and allow budget flexibility with California IOU’s Emerging Technologies program.

The PD currently states: “Pilots should address practical barriers to VGI-enabling technologies that have already been demonstrated and develop pathways to scale implementation through existing or potential new IOU programs that would further the goals of SB 676.”⁹ As noted in

⁷ PD at 32.

⁸ Reply Comments of The Vehicle-Grid Integration Council on The Transportation Electrification Framework (Sections 11.1 And 11.2), at 7, September 4, 2020

⁹ PD at 39.

reply comments, Joint Commenters stress that there is a significant risk associated with “over-piloting” solutions that may be well-suited to large-scale implementation through a utility program, VGI rate mechanism, or third party aggregator implementation.¹⁰ As such, even if the Commission continues to compile learnings through pilots, Joint Commenters urge the Commission to provide additional clarity on how the IOUs should “develop pathways to scale implementation” beyond the pilot phase. Specifically, the Commission should direct IOUs to identify a timeframe for how emerging technologies can ultimately be moved into a more wide-scale, long-term component of the TE plans.

Setting aside concerns about overreliance on pilots, the Joint Commenters believe the proposed level of funding for VGI pilots and emerging technologies is appropriate at this time. We note that the success of some potential pilots, and the utilization of these funds may partly depend upon the ongoing deliberations regarding vehicle-to-grid alternating current (“V2G AC”) pilot safety protocols, and the successful implementation of the newly clarified vehicle-to-grid direct current (“V2G DC”) interconnection pathway as approved in D.20-09-035. It is possible that there could be unforeseen delays or barriers in these efforts. As such, we suggest that the Commission offer some budget flexibility in the event the pilot funding is undersubscribed. For example, if the proposed \$35 million in pilot funding is not fully utilized, we suggest it could be applied to an appropriate category within the Emerging Technologies program or other VGI-related program alternates. OP 11 should be modified to reflect that flexibility.

E. Commission direction concerning IOUs’ collaboration with the California Independent System Operator (“CAISO”) should impose a reporting requirement to ensure responsible and effective outcomes.

Joint Commenters acknowledge that the Commission and IOUs cannot set wholesale market rules or access and appreciates the Commission’s direction for the IOUs to collaborate with the CAISO on these opportunities. Specifically, the PD states IOUs “shall collaborate with CAISO where beneficial and report on reforms to wholesale market rules and access that advance VGI strategies.”¹¹ However, Joint Commenters are concerned that this language may be too vague to achieve that outcome and may not accurately describe the recommendations for the respective

¹⁰ Joint Commenters reply comments at 9.

¹¹ PD at 18.

roles of the CAISO, the Commission, and the IOUs. The record of this proceeding and the VGI WG Final Report contain ample discussion on the barriers related to wholesale market participation, many of which do require the Commission and IOUs to serve as the lead actors.¹² As such, Joint Commenters request both OP 1 and OP 3 be revised as per our redlines in Appendix A. The Joint Commenters also recommend that the Commission direct this collaboration to include a focus on overcoming known barriers for VGI participation in DR, including baselining, submetering, telemetry, and export credit, and discussion of how EVs may offer novel solutions through vehicle telemetry options.

F. The PDs should create pathways for meaningful action to facilitate V2G interconnection.

Joint Commenters observe the PD does not detail how adoption of interconnection technical standards as a VGI strategy pursuant to SB 676 will interact with ongoing policy efforts. Instead, the PD states that: “Most of these reforms should be addressed in the Commission’s dedicated proceeding on interconnection and Electric Rule 21 – R.17-07-007.”¹³ We agree that most of the necessary reforms are occurring (or have already occurred) through the Rule 21 proceeding. Moreover, D.20-09-035 in that proceeding directed IOUs to develop a temporary interconnection pathway for V2G AC pilots. Since Commission approval of D.20-09-035, the IOUs have hosted two workshops to solicit stakeholder feedback on such a pathway, and several of the Joint Commenters have actively participated in these workshops. One key barrier identified in these workshops is the fact that the IOU interconnection engineering staff has limited resources to review V2G AC pilot projects proposals. To ensure that SB 676 leads to real-world progress on interconnection standards, Joint Commenters recommend the Commission allow the IOUs initiate an accelerated expansion program, which allows for cost recovery associated with enhancing and training their interconnection engineering staff pool. This will help accommodate the workload expansion attributable to expedited implementation of upcoming V2G pilots resulting from D.20-09-035.

G. OP 5 should be revised to provide a pathway to marketing, education, and outreach (“ME&O”) funds to ensure meaningful and lasting implementation

¹² See, for example, VGI WG Recommendation 3.01, 3.03, 3.04, 3.05, 3.07, and 2.01. These barriers include those related to metering requirements, the Wholesale Distribution Access Tariff for grid exports, Resource Adequacy value for grid exports, and the Demand Response Auction Mechanism.

¹³ PD at 22.

Several VGI WG recommendations and party comments demonstrate support for ME&O strategies to advance VGI.¹⁴ While OP 5 directs IOUs to identify education and outreach tactics related to specific VGI strategies, Joint Commenters wonder whether merely asking IOUs to identify strategies will lead to sufficient ME&O necessary to support VGI implementation and expansion. Instead, Joint Commenters recommend OP 5 be revised to require identifying a portion of future TE program ME&O budgets to educate customers about VGI opportunities. OP 5 should be revised per Joint Commenters' redlines in Appendix A.

H. OP 6 should be revised to account for the role of automotive original equipment manufacturers (“OEMs”)/EV service providers (“EVSPs”) in customer education and evaluation concerning ALM systems and other VGI strategies

The PD does not detail the role of third-party providers in delivering ALM technologies and other VGI strategies to customers, including critical customer ME&O activities, which third-party providers may be particularly well-suited to provide. Notably, if IOUs were directed to partner with OEMs/EVSPs, they would capitalize on the combined centuries of experience that OEMs/EVSPs have in marketing and engaging directly with customers in a competitive environment. In opening comments on the Draft TE Framework (“Draft TEF”), Southern California Edison (“SCE”) included data highlighting that OEMs are overwhelmingly the primary channel for customers seeking information on EVs, as well as the primary channel for information on incentives. Furthermore, SCE’s findings state “most (94%) customers feel that the automotive companies should be responsible for advertising related to EVs.”¹⁵ In addition, the PD does not adequately acknowledge the beneficial role OEMs/EVSPs may be able to play in collecting collect information on the load profiles for managed charging.¹⁶ If this information is collected solely from utility meters, it could miss more granular data available from EVSP/OEM sources that the IOUs could leverage. As such, Joint Commenters recommend OP 6 be revised per Appendix A redlines to meet customer needs and expectations for the third-party providers role in ME&O as it relates to ALM and other VGI strategies.

¹⁴ VGI WG recommendation 1.10 and 9.03; VGI WG Final Report at 9; Joint Commenters comments at 13; UCS comments at 12.

¹⁵ Southern California Edison Company’s (U 338-E) Opening Comments on Equity, VGI, and ME&O (Sections 6, 11.1, and 11.2) – Attachment A “Southern California Edison EV Awareness and Advertising Online Panel Research” at 2-4.

¹⁶ PD at 54.

IV. KEY AREAS REQUIRING CLARIFICATION OR EXPANSION.

A. Criteria used to determine whether a strategy should be adopted pursuant to SB 676 excludes strategies that may provide significant net benefits to ratepayers

The PD adopts three strategies as VGI strategies pursuant to SB 676,¹⁷ declines to adopt two VGI WG strategies as VGI strategies,¹⁸ and adopts the remaining six strategies as VGI strategies not pursuant to SB 676.¹⁹ By and large, the Commission’s categorization of SB 676 and non-SB 676 strategies seems to hinge on an underdefined rubric which might address whether a particular strategy is cost effective or not – as well as uncertainties in whether the strategy robustly addresses feasibility criteria. For example, in its discussion of reforming retail rates, the PD offers as justification that “reforming retail rates is feasible and low-cost with high potential benefit, as demonstrated by the parties.”²⁰ For both interconnection reform and non-interconnection standards, the PD offers as justification the terms “low-cost” and “feasible,” though it does not mention potential benefits.²¹ However, regarding discussion of EVs for bi-directional non-grid export power the PD states, “due to the lack of data concerning cost-effectiveness, it cannot be adopted as a SB 676 strategy at this time.”²² Joint Commenters are concerned about this for two reasons: first, the Commission does not appear to acknowledge that cost-effectiveness can be more comprehensive than economic savings. As has been discussed by multiple signatories to these comments, adopting a measure of cost that does not attempt to capture broader benefits, including societal benefits, is counterproductive and reductive, as it may prematurely or unfairly classify certain strategies as not worth pursuing, despite having valuable benefits under a more holistic accounting of benefits. Second, this approach may prematurely and artificially limit VGI strategies that could be adopted pursuant to SB 676. For some strategies, defensible data regarding costs, benefits and value are available and could be

¹⁷ (1) Reforming retail rates, (2) reform of interconnection rules, and (3) development, support and approval of non-interconnection standards. See PD at 15, 22, and 23.

¹⁸ (1) enhance coordination and consistency between agencies and state goals, and (2) conduct other non-VGI specific programs and activities to increase EV adoption. See PD at 24.

¹⁹ (1) Develop and fund government and load-serving entity customer programs, incentives, and Distributed Energy Resource procurements. PD at 17; (2) Design wholesale market rules and access. PD at 18; (3) Pilots, demonstrations, emerging technology, and studies. PD at 19; (4) Accelerate use of EVs for bi-directional non-grid export power and PSPS resiliency and backup. PD at 20; (5) Marketing, Education, and outreach. PD at 23.

²⁰ PD at 16.

²¹ PD at 22 and 23.

²² PD at 21.

used to assess the strategies through normal methods (e.g., Avoidable Cost Calculator and California Air Resources Board’s CalEnviroScreen Tools). Meanwhile, for other strategies, sharing information on costs remain a challenge for OEMs, which must comply with relevant antitrust laws that prevent disclosure of cost information. In other cases, while costs are quantifiable, the benefits are real and known, but difficult to quantify in the strategy’s infancy. In any of these cases, it would be pre-mature to reject a VGI strategy solely on the basis of cost-effectiveness, and the Joint Commenters recommend that any rejected strategies be re-evaluated as part of either the third-party evaluation process or the annual reporting process outlined in the PD. Moreover, if it is necessary to obtain cost data, the Joint Commenters recommend the third-party evaluator work with industry to confidentially collect and anonymize any competitively confidential cost information. Finally, the Commission’s evaluation criteria should be revised to consider potential high-benefit opportunities – including, critically, where equity considerations would be furthered – where evaluating cost-effectiveness is simply a matter of applying available methods. Indeed, the Commission should consider pursuing likely high-benefit, high-value strategies at scale, pursuant to SB 676, regardless of an arbitrary definition of cost or feasibility.

B. Several key terms are left undefined

The Joint Commenters note that some key terms within the PD remain undefined. This includes the terms “cost-effectiveness”, “feasible”, and “beneficial.” As discussed briefly above, many of the decisions on whether to pursue a strategy at scale or whether a strategy should be pursued as a SB 676 strategy or not are predicated on undefined measures. For example, the Commission states that “any strategies adopted by this decision pursuant to SB 676 must maximize the use of “cost-effective” VGI, meaning that the strategies themselves need to be shown to be cost-effective at the time of establishment. However, it is not clear that cost-effective from the Commission’s perspective means anything more than driving down the cost of electricity supply – while this is of course a key goal of SB 676, such a narrow definition gives short shrift to broader ratepayer benefits, which the PD gives a nod to, but fails to explore more comprehensively. As well, it is unclear whether feasibility is from the perspective of a VGI service provider, the utility or the Commission – given that those entities might have vastly different perceptions of what is possible, this is an important clarification. Joint Commenters seek clarity on the definition of those terms.

C. The Commission should provide more detail on how adoption of Reform Retail Rates as a VGI strategy interacts with the draft TEF

The PD adopts *Reform Retail Rates* as a VGI strategy pursuant to SB 676, and states “A future Commission decision regarding the rates section 9.1 of the draft TEF (Electric Vehicle Rate Evolution Plan Development Guidance) and / or other decisions may provide additional direction regarding rate reforms applicable to EVs.”²³ Joint Commenters respectfully request additional detail on how this element of the PD might interact with the draft TEF’s proposed EV Rate Evolution Plan (“EV REV Plan”) concept.²⁴ More specifically, Joint Commenters believe more direction is needed as to whether utilities should start to pursue a reform of retail rates now or wait for future clarification in a forthcoming decision, how this relates to existing proceedings and efforts, including dynamic rates proposals under consideration in PG&E and SDG&E General Rate Cases and PG&E’s commercial EV dynamic rate application, and when to expect a decision on the EV REV plan concept.

D. Joint Commenters respectfully request clarification that non-interconnection technical standards are adopted pursuant to SB 676

Section 5.7 of the PD discusses technical standards not related to interconnection. As written, the discussion states:

“this decision finds that development of such standards should be a non-SB 676 VGI strategy given that the development of new technology requires the adoption or revision of one or more technical standards. Because the development, support and approval of non-interconnection technical standards related to VGI services is generally low cost and is feasible to pursue, this strategy is adopted by this decision as a VGI strategy pursuant to SB 676.”²⁵

These successive sentences contradict each other. Joint Commenters respectfully request the Commission revise the language in this discussion section to clarify that, indeed, non-interconnection technical standards are adopted as a VGI strategy pursuant to SB 676 for the reasons articulated.

E. Stakeholders would benefit from an Appendix that illustrates the overlapping timelines stemming from the PD

²³ PD at 16.

²⁴ Draft TEF at Section 9.1.

²⁵ PD at 23.

The PD orders a workshop, several Advice Letter filings, consultation with Energy Division staff, and regular reporting requirements, all ranging from 30 days from adoption of the PD to March 2031. Joint Commenters urge the Commission to include an Appendix to clearly illustrate the many overlapping timelines to promote transparency and facilitate stakeholder engagement.

F. A focus on unique aspects of VGI opportunities for the MD/HD EV sector is still lacking

Joint Commenters support the expansion of the vehicle-grid integration definition to include medium-, heavy-duty, and off-road vehicle and equipment. However, the Commission only mentions larger vehicles twice, rather unconvincingly. First, they give consideration to CALSTART’s argument that “deployment of VGI for medium and heavy-duty charging offers a large opportunity to avoid distribution upgrades and...IOU TE program ‘make-ready’ costs”²⁶ by stating that electrical corporations are now required to “identify in annual VGI reporting deployment the number of ALM technologies installed for any medium and heavy-duty segment(s).”²⁷ As well, the Commission says utilities must “consider” medium- and heavy-duty vehicles for pilots²⁸ and break out larger vehicles with respect to VGI metrics.²⁹ However, these actions do not adequately recognize the deep potential for VGI among larger commercial vehicles. Given the larger battery of these vehicles and, for some vehicles like school buses, a predictable duty cycle that lends itself to provision of grid services, commercial vehicles can be an excellent focus for VGI efforts; as well, given the large power draw, it is even more important to ensure that these vehicles are a benefit, rather than a burden to the grid. As such, the Commission should require, not encourage, utilities to pursue VGI strategies that focus on harnessing the VGI capabilities of larger vehicles.

V. CONCLUSION.

Joint Commenters appreciate the opportunity to submit these opening comments on the PD concerning SB 676 implementation. We look forward to further collaboration with the Commission and stakeholders on this initiative.

²⁶ *Id.* at 29.

²⁷ *Id.*

²⁸ *Id.* at 40.

²⁹ *Id.* at 52.

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Respectfully submitted,

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**Appendix A
Recommended Redlines**

PD Title	PROPOSED DECISION CONCERNING IMPLEMENTATION OF SENATE BILL 676 AND VEHICLE-TO-GRID VEHICLE-GRID INTEGRATION STRATEGIES
Finding of Fact 13:	ALM has the potential to vary the charging of grid-connected EVs in a way that optimizes grid performance and maximizes ratepayer benefits by avoiding upgrades to customer-side, secondary, and primary distribution system infrastructure.
OP	Redline / Reference to Above Joint Comments
1	...efforts to collaborate with the California Independent System Operator to design wholesale market rules and access that support VGI as defined by this decision; efforts within Commission jurisdiction and IOU capabilities to facilitate wholesale market participation and access that advances VGI strategies in coordination with reforms underway at the California Independent System Operator.
3	Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company shall each: - collaborate with the California Independent System Operator to design wholesale market rules and access that support Vehicle Grid Integration as defined by this decision; as part of its annual and midterm reporting on VGI activities, the IOUs shall seek input from the CAISO and use any input received to provide a joint status report on collaboration activities
4	Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company shall, each, in all of its future applications for transportation electrification (TE) programs, tariffs for utility-side distribution infrastructure for separately metered electric vehicle charging installations pursuant to AB 841 (Ting, 2020), and including any other rule or tariff to support TE infrastructure installation: propose how it will incentivize and deploy customer-side Automated Load Management (ALM) technology at host sites where this technology will to support TE installation at equal or lesser costs than hardware-based electrical capacity for existing and new utility electrical service, and in a manner that yields net ratepayer benefits; describe its standard evaluation criteria to determine host sites where ALM would reduce infrastructure costs and benefit ratepayers by reducing costs utilizing existing utility electrical service as much as practical and feasible while meeting host site needs for electric vehicle charging;
5	identify strategies for educating host site customers on the benefits of 1) voluntarily passing time-of-use rate signals to electric vehicle drivers and, 2) participating in

	any demand response program(s) for which the host site customers are eligible; identify how it will establish outreach materials and load management tactics to reduce any grid impacts from host site customers that opt out of a default agreement to pass on time-of-use pricing; include in all future TE plans a detailed description of how the portion of ME&O budget allocated to the above activities will be used, and identification of opportunities to partner with market participants to strengthen IOU ME&O activities or meet gaps in IOU ME&O activities
6	Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company shall each partner with OEMs and EVSPs to provide customer education and evaluate effectiveness of these in achieving and sustaining customer acceptance one wherever these Automated Load Management systems are installed.
8	Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company shall jointly host a workshop in the first quarter of 2021 to educate potential solicit feedback from Vehicle Grid Integration (VGI) demand response providers and other interested stakeholders on demand response opportunities and identify any barriers to participation for VGI resources and strategies to overcome barriers... Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company shall jointly serve to the service list of this proceeding and the service list for Application 17-01-012 a post-workshop report within 30 days of the workshop that identifies any barriers to VGI participation in demand response programs, or any other programs such as bids for resource adequacy services to be delivered in 2022 per Decision 19-07-009. The utilities shall also request approval for a plan to overcome or partially alleviate each DR barrier in pursuit of facilitating 200 MW combined of VGI in next DR cycle portfolio and bids for resource adequacy services to be delivered per Decision 19-07-009.
11	<i>See Section II.D / Page 6 above</i>