

Docket No.: A.21-10-010

Exhibit No.: _____

Date: March 2, 2022

Witness: Ed Burgess

**OPENING TESTIMONY OF ED BURGESS
ON BEHALF OF THE VEHICLE GRID INTEGRATION COUNCIL**

Table of Contents

I.	Introduction	1
II.	Recommended modifications to the proposed EVC 2 ALM approach to ensure load management is sufficiently addressed	3
III.	VGIC recommends the Commission take actions to promote ALM in the “Realm of Rule 29” to complement the use of ALM in EVC 2 and support Transportation Electrification objectives outside of EVC 2.	14
IV.	Additional recommendations for incorporating VGI into EVC 2	17
V.	Conclusion	20
	Appendix A – Declaration of Ed Burgess in Support of Opening Testimony on Behalf of the Vehicle Grid Integration Council	A-1
	Appendix B –Calculations Showing Potential Cost Savings From Voluntary ALM	B-1

1 **I. INTRODUCTION**

2 **Q. Please state your name, title, and business address.**

3 A. My name is Ed Burgess. I am a Senior Director at Strategen Consulting and the Senior
4 Policy Director for the Vehicle Grid Integration Council (“VGIC”). My business address
5 is 2150 Allston Way, Suite 400, Berkeley, California 94704.

6 **Q. On whose behalf are you testifying?**

7 A. I am testifying on behalf of the Vehicle Grid Integration Council.

8 **Q. What is VGIC?**

9 A. VGIC is a 501(c)6 membership-based trade association committed to advancing the role
10 of electric vehicles (“EV”) and vehicle-grid integration (“VGI”) through policy
11 development, education, outreach, and research. VGIC supports the transition to a
12 decarbonized transportation and electric sector by ensuring the value from EV
13 deployments and flexible EV charging and discharging is recognized and compensated in
14 support of achieving a more reliable, affordable, and efficient electric grid.

15 **Q. Who are VGIC’s current members?**

16 A. VGIC’s members include Enel X, Ford, General Motors, Honda, Nissan, Nuvve,
17 Stellantis (formerly Fiat-Chrysler), Toyota, dcbel, Engie, Fermata Energy, Flexcharging,
18 Flo/AddEnergie, Sunrun, The Mobility House, WeaveGrid, and Veloce.¹

¹ The opinions expressed in this testimony reflect those of VGIC, and do not necessarily reflect the views of all of the individual VGIC member companies.

1 **Q. Please summarize your professional background and qualifications.**

2 A. I am a leader within Strategen's consulting practice where one of my primary
3 responsibilities is managing the VGIC, which is one of Strategen's primary clients. In
4 addition to VGIC, I oversee much of the firm's practice for governmental clients, non-
5 governmental organizations, and trade associations. Strategen's team is globally
6 recognized for its expertise in the electric power sector on issues relating to resource
7 planning, renewable energy, energy storage, electric vehicles, utility rate design and
8 program design, and utility business models and strategy. During my time at Strategen, I
9 have managed or supported projects for numerous client engagements related to these
10 issues. Before joining Strategen in 2015, I worked as an independent consultant in
11 Arizona for several years and regularly appeared before the Arizona Corporation
12 Commission. I also worked for Arizona State University where I helped launch their
13 Utility of the Future initiative as well as the Energy Policy Innovation Council. I have a
14 Professional Science Master's degree in Solar Energy Engineering and
15 Commercialization from Arizona State University as well as a Master of Science in
16 Sustainability, also from Arizona State. I also have a Bachelor of Arts degree in
17 Chemistry from Princeton University.

18 **Q. Have you ever testified before the California Public Utilities Commission, or any**
19 **other state regulatory body?**

20 A. Yes. I testified before the California Public Utilities Commission in proceedings A. 19-
21 08-002 and A. 20-08-002 both of which pertain to PacifiCorp's 2020 and 2021 Energy
22 Cost Adjustment Clause, as well as proceeding R.20-11-003 pertaining to Emergency
23 Reliability. I have also provided expert testimony before the Massachusetts Department

1 of Public Utilities, the South Carolina Public Service Commission, the Indiana Utility
2 Regulatory Commission, the Nevada Public Utilities Commission, the Oregon Public
3 Utilities Commission, and the Washington Utilities and Transportation Commission.

4 **Q. What is the purpose of your testimony?**

5 A. The purpose of my testimony is to respond to Pacific Gas and Electric Company’s
6 (“PG&E”) proposed extension and expansion of its EV Charge Network (“EVCN”) and
7 EV Fast Charge programs as filed in Application (“A.”) 21-10-010. Specifically, I will
8 address Issues 8, 11, 14, and 15 detailed in the *Assigned Commissioner’s Scoping Memo*
9 *and Ruling* (“Scoping Memo”) issued by Commissioner Rechtschaffen on January 5,
10 2022. In doing so, I describe the potential that VGI solutions could offer in achieving the
11 goals of the proposed EV Charge 2 expansion (“EVC 2”) and provide recommendations
12 for incorporating VGI strategies, including Automated Load Management (“ALM”) into
13 PG&E’s proposed EVC2.

14 **II. RECOMMENDED MODIFICATIONS TO THE PROPOSED EVC 2 ALM**
15 **APPROACH TO ENSURE LOAD MANAGEMENT IS SUFFICIENTLY**
16 **ADDRESSED.**

17 **Q. Generally speaking, is VGIC supportive of strategically incorporating ALM in EVC**
18 **2?**

19 A. Yes. VGIC believes that encouraging site hosts to voluntarily choose ALM solutions can
20 be a powerful tool for both streamlining and minimizing the costs of EV supply
21 equipment (“EVSE”) deployment. VGIC notes that Decision (“D.”) 20-12-029 deemed
22 ALM a near-term policy action in recognition that ALM is an important tool for helping

1 to meet California’s transportation electrification (“TE”) goals.² ALM can help mitigate
2 the costs of EVSE deployment, as detailed in PG&E’s prepared testimony on ALM
3 which states: “PG&E will build off the successful use of ALM in EVCN, whereby costs
4 were reduced and physical design constraints were overcome at customer sites that we
5 deemed a good fit to use this technology.”³ ALM can also be an important tool to
6 streamline EVSE deployment. For example, in PG&E’s *Q1 2022 Clean Energy*
7 *Transportation Program Advisory Council* meeting held on February 16, 2022, PG&E
8 indicated that over 50% of the reason applicants to the EV Charge Schools Program were
9 placed on the waitlist was due to limited transformer capacity requiring costly upgrades.
10 If ALM solutions were used to help avoid or defer these transformer upgrades, many of
11 these waitlisted EV Charge Schools Program sites might have been electrified sooner.⁴
12 The opportunity for ALM to streamline EVSE deployment was also captured during the
13 *Public Joint CEC CPUC Commissioner Workshop: Accelerating Electric Vehicle*
14 *Charging Infrastructure Deployment and Grid Integration* held on October 23, 2021.
15 During this meeting Commissioner Rechtschaffen recognized the current barriers to
16 Electrify America’s preferred ALM solution (i.e., co-locating of EVSE with stationary
17 energy storage to reduce peak site load), acknowledging it as “one concrete takeaway for

² D.20-12-029 at 25.

³ PG&E Prepared Testimony at 5-2.

⁴ To VGIC’s understanding, the Q1 2022 PAC Meeting materials have not yet been uploaded to PG&E’s website, however the Q2 2021 PAC Meeting materials show that transformer upgrades as a preliminary insight. PG&E Program Advisory Council Meeting, June 28, 2021 at slide 18.

https://www.pge.com/pge_global/common/pdfs/solar-and-vehicles/your-options/clean-vehicles/charging-stations/program-participants/EVCN-PAC-2021-Q2.pdf

1 us to look at going forward.”⁵ In all cases, however, implementation of ALM solutions
2 should aim to maximize flexibility for site hosts and EV customers.

3 **Q. What is the potential for cost savings if voluntary ALM were implemented more**
4 **widely?**

5 A. VGIC estimates that the potential magnitude of benefits that could accrue to California
6 utility ratepayers from voluntary ALM solutions through 2030 could be on the order of
7 \$1-2 billion dollars depending on participation rates and average site size.⁶ This is
8 consistent with Cal Advocates’ estimate that ratepayer burden related to waiving utility-
9 side customer contributions could amount to as much as \$2.2 billion by 2030.⁷

10 **Q. Scoping Memo Issue 15(a): Is PG&E’s proposal to consider automated load**
11 **management criteria in the design of all sites participating in the EVC 2 program**
12 **appropriate?**

13 A. VGIC is encouraged by PG&E’s proactive efforts to incorporate voluntary ALM
14 solutions into its EVC 2 program. However, we believe some further improvements to
15 this effort should be made before being deemed appropriate. Each of these improvements
16 is briefly summarized below and then discussed in greater detail in the remainder of my
17 testimony:

⁵ Exchange between Commissioner Rechtschaffen and a representative from Electrify America found at 3:54:11 to 3:59:41. Workshop recording available at: https://energy.zoom.us/rec/play/iV10CADIZMswX-q3gJprMB-nl62RqK4W9E-VtHtulYZt95gUKQV8Tila6REBu0kPdJsk0lY6rUIaVFO.jjAya1ExKuWkxlnm?startTime=1634056253000&_x_zm_rtaid=IBd0pRE8SKS7fkrL5_AFYA.1646259493033.7a18da4a1122493d0f5df1907e640b2c&_x_zm_rtaid=39

⁶ See Appendix B: Calculations Showing Potential Cost Savings From Voluntary ALM.

⁷ See Reply Comments of the Public Advocates Office on the Assigned Commissioner’s Ruling Regarding Implementation of Assembly Bill 841. (February 19, 2021). Page 4.
<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M366/K442/366442085.PDF>

- 1 (1) Customers should be permitted to elect third-party ALM options instead of
2 PG&E-implemented ALM options.
- 3 (2) Available third-party or PG&E-implemented ALM options should include, at a
4 minimum:
- 5 (a) ALM solutions that share available electrical capacity among charging
6 stations to avoid the installation cost of additional electrical capacity, for
7 example “software-based solutions” as described in Decision (D.) 20-12-029,
 - 8 (b) ALM solutions that share available electrical capacity among charging
9 stations and/or utilize on-site distributed energy resources (DER) to avoid the
10 installation cost of additional electrical capacity.
- 11 (3) To capture the full value ALM can provide, PG&E should offer a mechanism to
12 encourage ALM that minimizes to-the-meter (TTM) costs under the new “Realm
13 of Rule 29” framework, either by:
- 14 (a) Offering an incremental incentive to EVC 2 host sites voluntarily choosing to
15 implement ALM that is linked to the TTM cost savings component, or
 - 16 (b) Revising Rule 29 to promote optional ALM that reduces TTM costs.

17

18 **Q. Can you summarize PG&E’s proposed process for evaluating ALM options at an**
19 **EVC2 customer site as detailed in Chapter 5 of PG&E’s Prepared Testimony?**

1 A. Yes. In Chapter 5, PG&E states that “if sign-off [of a proposal with ALM options] is
2 received, PG&E will execute installation with ALM.”⁸ Notably however, PG&E’s
3 proposed process does not detail a pathway for third-party ALM to be proposed and
4 implemented.

5 **Q. Does VGIC agree with the proposed role of PG&E to exclusively evaluate, propose,
6 and execute ALM options?**

7 A. No. VGIC disagrees that PG&E should be the sole entity responsible for evaluating,
8 proposing, and executing ALM options. Given the critical importance of ALM in
9 reducing costs and overcoming physical design constraints in EVC 2, VGIC recommends
10 fostering competition in the ALM provider marketplace, which can reduce the costs of
11 ALM solutions themselves in EVC 2 and future programs. To promote healthy
12 competition in the ALM provider marketplace, PG&E should provide customers with the
13 option to use a third-party ALM solution rather than the proposed default arrangement of
14 PG&E-implemented ALM options. Supporting competition in this way would be
15 consistent with the existing paradigm for many TE programs around the country which
16 include a mixture of utility implemented solutions and third-party implemented solutions.
17 This balance helps maintain a competitive environment while still providing certainty
18 that California can achieve its ambitious TE objectives.⁹

19 **Q. Has PG&E expressed general support for this competitive dynamic?**

⁸ PG&E Prepared Testimony at 5-2.

⁹ See, for example, D.14-12-079, which “expands the electric utilities’ potential role in ownership of electric vehicle charging infrastructure.”

1 A. Yes. Commenting on the role of the IOUs in deploying TE infrastructure in 2020, PG&E
2 stated that it is important “for utilities to provide appropriate broad and targeted support
3 for the TE market within the context of their core capabilities and the roles they play in
4 the wider TE ecosystem. These capabilities [should] include: infrastructure, developing
5 appropriate rates for electric fueling, customer education, and programs,” and that the
6 Commission should “reframe the role of IOUs as market enablers and supporters rather
7 than market stimulators to ensure appropriate attention is given to core utility capabilities
8 without potential distractions.”¹⁰ Similar to the physical TE infrastructure that PG&E
9 referenced above, competition will help to drive down the cost of implementing ALM
10 solutions, which may include both physical solutions (e.g. stationary energy storage),
11 and/or software-based solutions.

12 **Q. Are there principles in the Draft TE Framework that support a more competitive**
13 **environment for ALM solutions?**

14 A. Yes. Some key principles regarding the role of IOUs in supporting widespread TE, as
15 proposed in the Draft TE Framework (TEF) include:

16 (1) “Stimulating innovation and competition, enable customer options in charging
17 equipment and services... where technologically feasible.”¹¹

18 (2) Ensuring IOU investments are in the “interests” of ratepayers as defined in
19 statute.¹²

¹⁰ PG&E Comments on Draft TEF Chapter 4 at 8.

¹¹ Public Utilities Code 740.12 (a)(1)(f)

¹² Public Utilities Code 740.8 defines the “interests” of ratepayers, short- or long-term, as 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

1 Limiting available ALM solutions to those implemented by PG&E would not support
2 principle 1 above, as it would limit the optionality that customers have in selecting
3 charging services. Regarding Principle 2, excluding third-party ALM solutions may limit
4 the number of ALM solutions in the marketplace and thus limit the achievable cost
5 savings for ratepayers.

6 **Q. Does the approach to ALM that PG&E ultimately adopts have broader implications**
7 **for the state’s TE programs?**

8 A. Yes. While PG&E’s original EVCN program used ALM to reduce site costs in a small
9 number of cases, the current EVC 2 application is the first IOU TE application to propose
10 standard evaluation criteria for ALM pursuant to D.20-12-029, and could serve as a
11 precedent for other IOUs. Meanwhile, the recent February 25, 2022 Staff Proposal on TE
12 Funding filed in R.18-12-006 indicates a shift toward increased standardization and
13 consistency across utility TE programs.¹³ If this Staff Proposal is adopted, it would also
14 signify a shift toward a statewide BTM rebate program beginning in 2025. Thus, the
15 integration of ALM options into EVC 2 comes at a critical turning point that could set the
16 stage for using ALM to mitigate infrastructure costs statewide for years to come.

17 **Q. Is VGIC confident that third-party entities can provide ALM solutions?**

18 A. Yes. VGIC is confident that third-party entities can provide ALM solutions in the near-
19 term. Moreover, allowing third-party ALM solutions to participate in EVC 2 would

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; and (5) creating high-quality jobs or other economic benefits, including in disadvantaged communities identifies pursuant to §39711 of the [California] Health and Safety Code.

¹³ *Assigned Commissioner’s Ruling Adding Staff Proposal to the Record and Inviting Party Comments*, filed in R.18-12-006 on February 25, 2022 at 15.

1 support the development of additional third-party ALM solutions in the long-term. In
2 PG&E’s EVCN, ALM was already used to save \$30,000 to \$200,000 per project,
3 demonstrating that ALM solutions are both commercially-available and effective.¹⁴
4 Technology providers such as AddEnergie, Enel X, EVBox, FreeWire Technologies, The
5 Mobility House, Powerflex, and Veloce Energy offer commercially-available ALM
6 software and/or hardware solutions.¹⁵

7 **Q. Chapter 5 of PG&E’s prepared testimony states “ALM is used to share available**
8 **electrical capacity among charging stations to avoid the installation cost of**
9 **additional electrical capacity.”¹⁶ Which types of ALM solutions should be eligible**
10 **under this description of ALM?**

11 A. PG&E’s prepared testimony does not detail which technologies are considered ALM
12 solutions for the purposes of EVC 2. There exist emerging technology standards and
13 certifications that may be useful in determining what is considered an ALM solution
14 (e.g., CSA Group’s EV Energy Management Systems standard¹⁷). In addition, VGIC
15 notes that behind-the-meter stationary energy storage can be used to provide ALM at a
16 customer site to share available electrical capacity among charging stations while
17 avoiding the installation cost of additional electrical capacity. As ALM is often used as

¹⁴ See PG&E ALM/EV EMS Workshop Presentation. January 29, 2021. See also Appendix D of D.20-12-029
“PG&E Electric Vehicle Infrastructure OIR Rulemaking 18-12-006 Data Response”
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M356/K212/356212163.pdf>.

¹⁵ AddEnergie “PowerSharing” <https://addenergie.com/en/core/>
Enel X “JuiceBox” <https://evcharging.enelx.com/commercial-charging>
EVBox “Workplace Charging Solutions” <https://evbox.com/us-en/charging-solutions/workplace>
FreeWire Technologies “BOOSTCHARGER” and “AMP” <https://freewiretech.com/products/dc-boost-charger/>
The Mobility House “ChargePilot” https://www.mobilityhouse.com/usa_en/charging-and-energy-management
Powerflex “Adaptive Load Management” <https://www.powerflex.com/products/ev-charging/>
Veloce Energy “VPORT” <https://www.veloceenergy.com/products>

¹⁶ PG&E Prepared Testimony Ch 5-2.

¹⁷ See <https://www.csagroup.org/article/research/electric-vehicle-energy-management-systems/>

1 an umbrella term, VGIC recommends PG&E specify which utility implemented and
2 third-party implemented ALM solutions are eligible for use in EVC 2. Available third-
3 party or PG&E-implemented ALM options should include, at a minimum:

4 (1) ALM solutions that share available electrical capacity among charging stations to
5 avoid the installation cost of additional electrical capacity, for example “software-
6 based technology” as described in Decision (D.) 20-12-029¹⁸

7 (2) ALM solutions that share available electrical capacity among charging stations
8 and/or utilize on-site distributed energy resources (DER) to avoid the installation
9 cost of additional electrical capacity

10 In both cases there are certain barriers that may need to be addressed to formally
11 recognize each solution’s load reduction potential. For example, some utilities may treat
12 BTM storage as an incremental load, rather than as a load reducer.

13 **Q. Chapter 5 of PG&E’s Prepared Testimony proposes to share cost savings resulting**
14 **from ALM implementation between PG&E and the customer site. Does VGIC**
15 **believe PG&E’s proposed shared savings approach is a reasonable way to**
16 **encourage ALM options?**

17 A. VGIC believes that PG&E’s shared savings approach is reasonable and is generally
18 supportive of the underlying mechanism as a means to encourage some amount of ALM.
19 However PG&E’s proposed approach is also insufficient to unlock the full potential that
20 ALM can offer.

21 **Q. Why is PG&E’s approach insufficient to unlock ALM’s full potential?**

¹⁸ D.20-12-029 at 26.

1 A. Under the proposed EVC 2 ALM approach, both the host customer and PG&E would
2 benefit from savings on behind-the-meter (“BTM”) make-ready infrastructure costs.
3 However, due to the recently approved Rule 29, the host customer would not realize any
4 benefit from reducing to-the-meter (“TTM”) infrastructure costs that result from their
5 choice to implement ALM solutions. In other words, host customers choosing an ALM
6 solution would only benefit from reducing the “Realm of EVC 2” infrastructure costs and
7 would not benefit from the potentially more significant reduction in infrastructure costs
8 that are in the “Realm of Rule 29.”¹⁹ Meanwhile, EVSE deployment can still be delayed
9 if TTM upgrades are ultimately needed since there was no incentive to consider ALM
10 solutions that might avoid these TTM upgrades.

11 **Q. Can you provide an example of this unrealized potential?**

12 A. Yes. Consider a hypothetical EVC 2 workplace charging customer who is not in an AB
13 841 Prioritized Community. For this installation, BTM make-ready infrastructure costs
14 are \$12,500 per port without ALM solutions and \$10,000 per port with ALM solutions.
15 Without ALM, this customer would pay 20%, or \$2,500, in per port make-ready costs,
16 and with ALM the customer would pay \$2,000 per port in make-ready costs. Therefore, if
17 this customer believes an ALM solution is appropriate and desirable in their situation,
18 they could implement ALM to save \$500 per port on their BTM make-ready costs. If 10
19 ports were installed at this site, the ALM solution would yield \$5,000 in customer
20 savings. Meanwhile, the resulting cost savings on TTM costs (e.g., service transformer,
21 service/network upgrades²⁰) that are in the realm of Rule 29 could be on the order of

¹⁹ PG&E Prepared Testimony Ch 4-8, Figure 4-1.

²⁰ PG&E Prepared Testimony Ch 5-AtchA-3

1 \$100,000 for the same site. However, none of those TTM savings are shared with the
2 customer, despite being much more significant than the BTM savings. Since power
3 sharing capabilities and ALM solutions may require customers to incur incremental costs
4 (i.e., in partnership with their third-party ALM provider) or limit service, certain EVC 2
5 customers may have relatively little incentive to select an ALM solution since they would
6 be unable to realize a large portion of the benefits.

7 **Q. Given these limitations, should PG&E’s shared savings model for EVC 2 be**
8 **adopted?**

9 A. Yes, however additional steps should also be taken. VGIC agrees that the shared savings
10 model proposed in EVC 2 should be implemented to account for BTM cost savings.
11 However, we recommend that the Commission direct PG&E to seek one of the following
12 two options to appropriately account for TTM cost savings achieved through ALM:

13 (a) Option 1: PG&E would offer an incremental incentive to EVC 2 host sites
14 choosing to implement ALM that is based on the TTM cost savings
15 component. In PG&E’s Prepared Testimony, the Company details an
16 assessment process for “Opportunistic ALM” in which PG&E considers
17 opportunities that are both BTM and TTM.²¹ As part of this process, PG&E
18 should evaluate the TTM Rule 29 cost savings associated with achieving a
19 certain Load Management Level, either on a site-specific basis or on average
20 across EVC 2 customer sites. An incentive level for the avoided TTM costs
21 that is commensurate with the BTM shared savings component could be

²¹ PG&E Prepared Testimony Ch 5-AtchA-2.

1 considered (e.g., for a non-AB 841 PC L2 workplace charger, 20% of the
2 savings would go to the site host, with the remaining 80% of savings
3 benefiting all ratepayers).

4 This additional rebate for electing ALM solution could help drive adoption of
5 ALM solutions and lead to lower per port costs when both BTM and TTM
6 costs are considered. VGIC believes this is in the best interest of ratepayers,
7 supports the near-term actions detailed in D.20-12-029, supports the state's
8 TE goals, and supports the Commission's vision for a high DER future.

9 (b) Option 2: Alternatively, the Commission should authorize PG&E to revise
10 Rule 29 to promote optional ALM that reduces TTM costs. This option is
11 discussed in detail in Section III below.

12 **III. VGIC RECOMMENDS THE COMMISSION TAKE ACTIONS TO PROMOTE**
13 **ALM IN THE "REALM OF RULE 29" TO COMPLEMENT THE USE OF ALM**
14 **IN EVC 2 AND SUPPORT TE OBJECTIVES OUTSIDE OF EVC 2.**

15 **Q. Is promoting optional ALM in the "Realm of Rule 29" reasonable and appropriate**
16 **for the Commission to do at this time?**

17 A. Yes, VGIC believes promoting ALM in the "Realm of Rule 29" is reasonable and
18 appropriate for the Commission to pursue at this time. On multiple occasions over the last
19 year, VGIC and other stakeholders have pointed out the dilemma between the
20 substantially diminished incentive for customers to choose ALM (due to the new EV

1 Infrastructure Rule 29) and the clear guidance in D.20-12-029.²² However, the
2 Commission has yet to take action on this issue. While the draft Resolution E-5167
3 entertained the possibility of a workshop and proposals for how “Realm of Rule 29” costs
4 should be treated in the future, the final adopted Resolution E-5167 removed this track.²³
5 At this time, it is uncertain whether the Commission will pursue *any* action to encourage
6 voluntary ALM as a means to minimize TTM costs and streamline EVSE deployment.

7 **Q. Is it appropriate to address this issue in this proceeding?**

8 A. Yes. PG&E has proposed ALM Criteria that would seek to identify Opportunistic ALM
9 solutions that includes TTM costs.²⁴ The only missing component appears to be an
10 appropriate incentive for customers to pursue ALM solutions that address TTM costs.
11 VGIC believes this proceeding may be the most appropriate place to address this issue at
12 present. While this could have been addressed as part of the recent Rule 29 changes,
13 VGIC recognizes that this did not occur and may not occur any time soon. Notably,
14 Resolution E-5167 states that modifications to Rule 29 will not occur before PG&E’s
15 next General Rate Case cycle ends in 2026.²⁵ Despite this determination, in prepared
16 testimony PG&E requests “authorization to modify Rule 29, section E.1.b to provide an

²² See: January 15, 2021 Pre-Workshop Comments in Advance of January 29, 2021 EV EMS Workshop; VGIC Presentation during January 29, 2021 EV EMS Workshop; Comments of VGIC on Assigned Commissioners Ruling on AB 841 Implementation on February 5, 2021 <https://www.vgicouncil.org/s/Comments-of-VGIC-on-ACR-Regarding-Implementation-of-AB-841.PDF> ; Reply Comments of VGIC on Assigned Commissioners Ruling on AB 841 Implementation on February 19, 2021 <https://www.vgicouncil.org/s/VGIC-Reply-Comments-on-ACR-for-AB-841-R18-12-006.pdf> ; Multi-Stakeholder Letter on ALM Circulated to Commissioners and Energy Division staff on June 16, 2021 <https://www.vgicouncil.org/s/Enabling-ALM-Stakeholder-Letter-to-CPUC.pdf> ; VGIC Comments on EV Infrastructure Rules Resolution on August 25, 2021 <https://www.vgicouncil.org/s/VGICs-Comments-on-Draft-Resolution-E-5167-R18-12-006.pdf> ;

²³ Draft Resolution E-5167 at 28; Resolution E-5167 at 30 and 55.

²⁴ PG&E Prepared Testimony Ch 5-AtchA-2.

²⁵ Resolution E-5167 at 30 and 55.

1 exception for non-residential Applicants receiving PG&E-owned chargers through the
2 EVC 2 program (that would otherwise be Rule 29-eligible).”²⁶ Thus, to the extent that
3 modifications to Rule 29 are needed to encourage ALM solutions for TTM costs, VGIC
4 believes that a similar exception may be appropriate and would support California’s
5 broader TE goals.

6 **Q. What other actions should the Commission take to promote optional ALM**
7 **solutions, pursuant to D.20-12-029?**

8 A. As outlined above, VGIC believes an incremental incentive for ALM solutions targeting
9 TTM costs and offered through the EVC 2 program could be one potential mechanism.
10 VGIC’s primary recommendation is for the Commission to direct PG&E to supplement
11 its proposal in this proceeding with such a mechanism. Alternatively, the Commission
12 could direct PG&E to revise its Rule 29 to incorporate a similar new mechanism for
13 promoting optional ALM solutions. VGIC believes revising Rule 29 to incorporate
14 optional ALM solutions would be consistent with Ordering Paragraph (OP) 5 of D.20-12-
15 029.²⁷ If the Rule 29 pathway is preferred, at a minimum, the Commission should direct
16 IOUs to convene a workshop in June, as originally proposed in Draft Resolution E-5167,
17 to discuss options for incentivizing ALM as a means to mitigate TTM costs borne by all
18 ratepayers.

²⁶ PG&E Prepared Testimony Ch 4-12.

²⁷ OP 5 of D.20-12-029 states “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, or rule or tariff to support TE infrastructure installation: identify how it will deploy customer-side Automated Load Management (ALM) at host sites through such programs, rule, and/or tariff where appropriate because this technology will support TE installation at equal or lesser costs than hardware-based electrical capacity while meeting TE charging needs; and describe its standard evaluation criteria to determine host sites where ALM would benefit ratepayers by reducing costs while meeting host site needs for electric vehicle charging.”

1 **IV. ADDITIONAL RECOMMENDATIONS FOR INCORPORATING VGI INTO**
2 **EVC 2.**

3 **Q. Does VGIC support PG&E’s proposed marketing, education, and outreach**
4 **(ME&O) approach?**

5 A. VGIC would support the proposed approach if the following modifications were made:

6 (1) ME&O related to rates should prioritize informing customers about the benefits of
7 dynamic rates, including PG&E’s Day-Ahead Real-Time Hourly Pricing
8 (DAHRTP) rate. In prepared testimony, PG&E details that host customers must
9 take service under a time-of-use (“TOU”) rate to be eligible for EVC 2
10 participation, and that customers will be defaulted onto PG&E’s BEV Rate.²⁸
11 PG&E also states that customers may choose to enroll in the Day-Ahead Hourly
12 Real Time Price (“DAHRTP”) Rate, which is likely to be first implemented
13 around the same time as the proposed implementation of EVC 2.²⁹ While VGIC
14 supports the proposed approach to allow EVC 2 customers to take service under
15 the DAHRTP, the EVC 2 Application and prepared testimony are silent on how
16 DAHRTP will be incorporated into PG&E’s ME&O strategy for EVC 2. The
17 success of time-based rates hinges on the ability to effectively engage with
18 customers.³⁰ As such, VGIC believes focusing EVC 2 ME&O efforts related to
19 rates on promoting DAHRTP could meaningfully support DAHRTP enrollment

²⁸ PG&E Prepared Testimony Ch 5-2.

²⁹ Decision 21-11-017.

³⁰ See US Department of Energy Electric Delivery & Energy Reliability, Smart Grid Investment Grant Program. “Customer Acceptance, Retention, and Response to Time-Based Rates from the Consumer Behavior Studies.” November 2016. Executive Summary Page xi and Section 8.2 at 70.

https://www.energy.gov/sites/prod/files/2016/12/f34/CBS_Final_Program_Impact_Report_Draft_20161101_0.pdf

1 and the resulting charging load profiles that DAHRTP is designed to incentivize.
2 VGIC recommends PG&E more clearly define the mechanism by which EVC 2
3 hosts will be informed of and participate in DAHRTP.

4 (2) ME&O related to dynamic rates, including PG&E’s DAHRTP rate, should
5 leverage EVSPs, automotive original equipment manufacturers (OEMs), and the
6 third-party entities to inform customers of both the benefits of dynamic rates and
7 the possibility that their participation can be managed “behind-the-scenes” by an
8 EVSP, automotive OEM, or other third-party entity.

9 **Q. Does VGIC support PG&E’s proposal to include bidirectional EV charging stations**
10 **and incorporate vehicle-to-“X” capabilities in EVC 2?**

11 A. VGIC generally supports PG&E’s proposal to include bidirectional EV charging stations
12 but offers some suggested modifications to PG&E’s proposal:

13 PG&E correctly identifies that, although a nascent market, several bidirectional charger
14 vendors do currently supply UL-certified and Rule 21-compliant bidirectional direct
15 current (“DC”) EVSE.³¹ With an ever-increasing supply of bidirectionally-capable
16 vehicles and chargers, it is prudent to prepare California’s TE programs, rules, and
17 policies to account for a range of bidirectional use cases, technologies, and
18 configurations.³² In addition to growing product options and supply, growing customer
19 interest in bidirectional equipment, and an interconnection pathway for bidirectional DC

³¹ PG&E Prepared Testimony Ch 5-5

³² For VGIC’s “stocktake” of bidirectional-capable vehicles on California’s roads today, currently-deployed bidirectional EVSE, and forthcoming bidirectional products, see *Opening Testimony of Ed Burgess on Behalf of the Vehicle Grid Integration Council* filed September 1, 2021 in Rulemaking 20-11-003 at page 7: <https://static1.squarespace.com/static/5dcde7af8ed96b403d8aeb70/t/6137a2f643f8bc74a42af9ae/1631036151186/2021-09-01+VGIC%27s+Opening+Testimony+on+Phase+2+Emergency+Reliability+Proposals+-+FINAL.pdf>

1 EVSE, the Commission has also approved a temporary interconnection pathway for
2 bidirectional alternating current (“AC”) pilots.³³

3 In prepared testimony, PG&E states that “customers who are interested in owning
4 bidirectional equipment...may be eligible to participate in EVC 2...”³⁴ PG&E also notes
5 that bidirectional EVSE can allow an EV to provide onsite backup power, but that
6 “...PG&E will first need to, at a minimum, update customer rate analysis tools as well as
7 billing systems to send correct usage to Third-Party Billing for Direct Access and
8 Community Choice Aggregation customers.”³⁵ Based on PG&E’s expectation that
9 customers who are interested in owning bidirectional equipment may be eligible to
10 participate in EVC 2 and acknowledgement of discrete tasks to enable this participation,
11 VGIC believes it would be appropriate for PG&E to set aside a dedicated budget to
12 conduct the rate analysis tool update, billing systems updates, and any other tasks needed
13 to integrate bidirectionally-capable EVSE into EVC 2.

14 **Q. Is the Automated Demand Response program that PG&E proposes to educate**
15 **customers the most appropriate demand response (DR) program for EVC 2**
16 **customers? How does PG&E’s proposal consider the Commission’s ongoing work**
17 **on DR?**

18 A. In addition to PG&E’s Automated Demand Response program, PG&E should educate
19 customers on the new Emergency Load Reduction Program (“ELRP”) Group A.5
20 pathway and any upcoming EV DR programs that may result from the May 2022 DR
21 Applications or subsequent DR programs developed in R.18-12-006.

³³ See CPUC Resolution E-5165.

³⁴ PG&E Prepared Testimony Ch 5-6.

³⁵ PG&E Prepared Testimony Ch 5-5.

1 V. CONCLUSION

2 Q. Does this conclude your testimony?

3 A. Yes.

Appendix A:

Declaration of Ed Burgess in Support of Opening Testimony on Behalf of the Vehicle Grid
Integration Council

**DECLARATION OF ED BURGESS IN SUPPORT OF OPENING TESTIMONY ON
BEHALF OF THE VEHICLE GRID INTEGRATION COUNCIL**

I, Ed Burgess, am the Senior Policy Director for the Vehicle Grid Integration Council (VGIC). Having worked for VGIC since its founding in 2020, I am currently managing policy and regulatory affairs for VGIC and its 18 member companies. My business address is 2150 Allston Way, Suite 400, Berkeley, CA 94704. I declare under penalty of perjury that the foregoing facts in this document are true and correct.

Executed on March 2, 2022 at Berkeley, California.

A handwritten signature in black ink, appearing to read "Edward A. Burgess". The signature is written in a cursive, flowing style.

Ed Burgess

Appendix B:

Calculations Showing Potential Cost Savings From Voluntary ALM

1 Potential Magnitude of Voluntary EV Automated Load Management (ALM) Solutions in terms of
 2 California Utility Ratepayer Cost Savings

3 VGIC estimates that the potential magnitude of benefits that could accrue to California utility
 4 ratepayers from voluntary EV ALM solutions through 2030 could be on the order of **\$1-2 billion**
 5 **dollars** depending on participation rates and assumed number of chargers per site. The table
 6 below demonstrates how this range was estimated. VGIC recognizes that there are many
 7 practical barriers to achieving these benefits and thus, this is intended to be a high level “first
 8 approximation” of the potential magnitude of this issue.³⁶

Table B-1	
118,950	CEC Projected Charger Installations by 2025 (AB 2127 Report, Table 3) ³⁷
943,824	CEC Estimate of Additional Chargers Needed by 2030 (AB 2127 Report, Table 3) ³⁸
1,062,774	Total L2 chargers needed by 2030
10	Assumed # chargers per site
106,277	Total Sites
\$30,000	Potential ALM savings per site - low (low end of range based on PG&E's experience to date as per Appendix D of D.20-12-029) ³⁹
\$200,000	Potential ALM savings per site - high (high end of range based on PG&E's experience to date as per Appendix D of D.20-12-029) ⁴⁰
\$115,000	Assumed ALM savings per site (midpoint of range above)
\$ 12,221,901,000	Total Technical Potential for ALM savings (calculated based on midpoint of PG&E savings range times total sites)
10%	Assumed Site Host Participation Rate (low)
20%	Assumed Site Host Participation Rate (high)
\$ 1,222,190,100	Potential ALM savings through 2030 - low (based on total technical potential times low participation rate)
\$ 2,444,380,200	Potential ALM savings through 2030 - high (based on total technical potential times high participation rate)

³⁶ Note this is consistent with Cal Advocates’ estimate that ratepayer burden related to waiving utility-side customer contributions could amount to as much as \$2.2 billion by 2030. See Reply Comments of the Public Advocates Office on the Assigned Commissioner’s Ruling Regarding Implementation of Assembly Bill 841. (February 19, 2021). Page 4. <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M366/K442/366442085.PDF>

³⁷ Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment: Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030. Page 14. <https://www.energy.ca.gov/programs-and-topics/programs/electric-vehicle-charging-infrastructure-assessment-ab-2127>

³⁸ Ibid.

³⁹ PG&E EVCN Data. Appendix D of D.20-12-029 “PG&E Electric Vehicle Infrastructure OIR Rulemaking 18-12-006 Data Response” <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M356/K212/356212163.pdf>

⁴⁰ Ibid.

