

**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)

**COMMENTS OF THE VEHICLE GRID INTEGRATION COUNCIL ON  
THE PROPOSED DECISION ADOPTING PLUG-IN ELECTRIC  
VEHICLE SUBMETERING PROTOCOL AND ELECTRIC VEHICLE  
SUPPLY EQUIPMENT COMMUNICATION PROTOCOLS**

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July 20, 2022

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In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the Vehicle Grid Integration Council (“VGIC”) <sup>1</sup> hereby submits these comments on the *Proposed Decision Adopting Plug-In Electric Vehicle Submetering Protocol and Electric Vehicle Supply Equipment Communication Protocols* (“PD”), issued on June 30, 2022.

**I. INTRODUCTION.**

VGIC is a 501(c)6 membership-based advocacy group committed to advancing the role of electric vehicles (“EV”) and vehicle-grid integration (“VGI”) through policy development, education, outreach, and research. VGIC supports the transition to a decarbonized transportation

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<sup>1</sup> VGIC member companies and supporters include American Honda Motor Co., Inc., dcbel, Enel X North America, Inc., ENGIE NA, Fermata Energy, FlexCharging, Flo/AddEnergie, Ford Motor Company, General Motors Company, Nissan Group of North America, Nuvve Holding Corporation, Sacramento Municipal Utility District, Stellantis N.V., Sunrun, Switch EV Ltd, The Mobility House, Toyota Motor North America, Inc., Veloce Energy, Inc., Wallbox USA Inc., and WeaveGrid. The views expressed in these Comments are those of VGIC, and do not necessarily reflect the views of all individual VGIC member companies or supporters. (<https://www.vgicouncil.org/>).

and electric sector by ensuring the value from EV deployments and flexible EV charging and discharging is recognized and compensated to achieve a more reliable, affordable, and efficient electric grid.

VGIC commends Energy Division Staff for its efforts to advance the use of submetering in the PD. While VGI aggregators participating in the Emergency Load Reduction Program (“ELRP”) are permitted to use EV supply equipment (“EVSE”) submetering to measure incremental load reduction,<sup>2</sup> to VGIC’s knowledge this is the only existing submetering pathway available in California. If the Commission does not act to adopt an EVSE submetering protocol – or take additional steps to leverage vehicle telematics for the same purpose – other states are poised to “leapfrog” California by enabling these options at scale. VGIC considers the PD a critical step in enabling the transportation electrification (“TE”) future that California seeks and strongly encourages the Commission to expeditiously modify and approve the PD to advance EVSE submetering and EV telematics.

Specifically, VGIC supports that the PD allows submetering for residential, non-residential, and multiple-customer-of-record (“MCOR”) customers rather than limiting submetering to only residential customers. Facilitating customer participation in EV-specific rates, Demand Response (“DR”) programs, and other VGI programs without having to install a separate meter is a critical and necessary step to unlocking widespread peak load reductions for EV charging, enabling key bidirectional charging use cases, accelerating the deployment of EVSE, and maximizing ratepayer and societal benefits. VGIC also appreciates that the PD utilizes a 1% lab / 2% field accuracy standard, consistent with the National Institute of Standards and Technology (“NIST”) Handbook 44 and the California Department of Food and Agriculture’s

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<sup>2</sup> Energy Division’s Review and Disposition of *Joint Advice Letter 6485-E et al.* (June 17, 2022).

Division of Measurement Standards (“CDFA-DMS”) requirements. However, VGIC seeks clarification on crucial implementation steps for the submetering and EVSE communications protocols. Moreover, VGIC is disappointed that vehicle telematics – a viable form of submetering – is absent from the PD and recommends steps to address this oversight. Below is a summary of VGIC’s recommended enhancements to the PD:

- Eligibility
  - The Decision should explicitly state that bidirectional chargers that comply with the submetering protocol are permitted to submeter both EV charging and discharging.
  - ii. The Decision should clarify that non-residential customers (in addition to MCOR customers) shall not be precluded from participation in submetering after this Decision, even if there are subsequent efforts to address the remaining barriers.
- Implementation
  - Ordering Paragraph (“OP”) 2 should be modified to direct the utilities to update their rate tariff sheets in addition to their respective electric rules.
  - The Decision should direct each investor-owned utility (“IOU”) to assess and modify DR programs to ensure customers using EVSE submetering are not excluded or otherwise put at a disadvantage relative to customers using separately metered EVSE.
- Approved Submetering List
  - The Decision should clarify that a customer may use a device for submetering once it appears on the Approved Submetering List and that no additional approvals are necessary. If this is not the case, the Decision should clarify at which point customers will be made aware of the devices they may use.
  - The Decision should direct utilities to maintain a single list of devices that comply with the applicable accuracy standards rather than duplicate lists.
- EVSE Standards
  - The Decision should exempt EVSE used for bidirectional charging purposes from the proposed Combined Charging System (CCS) and International Organization for Standards (“ISO”) 15118 requirements to avoid mistakenly putting an abrupt end to critical ongoing efforts to pilot, demonstrate, and scale bidirectional charging use cases.
  - The Decision should align the Open Charge Point Protocol (“OCPP”) 1.6 and ISO 15118 requirements with the California Energy Commission’s (“CEC”) California EV Infrastructure Project (“CALeVIP”) and National EV Infrastructure (“NEVI”) program implementation timelines.

- OP 6 should be modified to clarify that “ratepayer-funded or utility-administered programs” refers only to EVSE rebates for ratepayer-funded “make ready” programs and Low Carbon Fuel Standard (“LCFS”)-funded programs and does not include DR programs or pilots, VGI programs or pilots, and EV rates.
- The Decision should reference existing standards for bidirectional chargers to promote marketplace awareness.
- Telematics
  - The Decision should reference the numerous party comments related to telematics and include corresponding Findings of Fact (“FOF”).
  - The Decision should direct Energy Division staff to host a workshop within 60 days to discuss telematics, prepare a workshop report, and seek comments on the workshop report.

Additionally, VGIC has detailed specific redline edits to the PD in Appendix A to this document, which address the recommendations above.

## **II. RECOMMENDED ENHANCEMENTS TO THE PROPOSED DECISION.**

### **A. Eligibility**

- i. The Decision should explicitly state that bidirectional chargers that comply with the submetering protocol are permitted to submeter both EV charging and discharging.***

Bidirectional chargers that comply with the submetering protocol should be eligible for submetering. Currently, customers seeking to use bidirectional charging systems to provide vehicle-to-home (“V2H”) or vehicle-to-building (“V2B”) backup power to their site must forego the opportunity to participate in compelling EV-specific rates, which require separate metering. Similarly, customers seeking to use V2B bidirectional charging systems to meet site load, for example, to manage demand charges, are unable to do so if they wish to take service under a compelling separately-metered EV-specific rate. Lastly, without submetering, bidirectional charging customers looking to take advantage of a vehicle-to-grid (“V2G”) export compensation mechanism, such as the pending Pacific Gas & Electric (“PG&E”) Day-Ahead Hourly Real-Time

Pricing (“DAHRTP”) V2G Export Rate<sup>3</sup> or San Diego Gas & Electric (“SDG&E”) Export Rates<sup>4</sup> would have to install a separate meter to do so, incurring additional costs and potential delays. Each of these use cases represents a significant driver of both customer value and ratepayer benefit, as determined in the VGI Strategies Decision (“D.”) 20-12-029. However, if a separate meter is still required for bidirectional charging (rather than allowing submetering) then the Commission would continue to pit two Commission-adopted VGI strategies against each other. Namely, the VGI strategy of optional dynamic pricing structures<sup>5</sup> would be at odds with the VGI strategy of enabling V2H/V2B backup power, V2B bill management, and V2G exports,<sup>6</sup> and customers would be unable to leverage both. The submetering protocol, however, will unlock tremendous participant and ratepayer value if bidirectional chargers are deemed eligible for submetering.

Meanwhile, VGIC is not aware of any technical barriers to submetering charging load using bidirectional chargers. Moreover, there do not appear to be any technical barriers prohibiting the submetering of kWh *discharged* from the EV. Notably, bidirectional charging systems participating in ELRP, EV/VGI Aggregation Customer Group A.5 can already use submetering. This demonstrates that there are not only no known technical barriers but also likely no implementation barriers to using bidirectional chargers to submeter both EV charging and discharging.

The PD and attached submetering protocol as written do not prohibit or exclude bidirectional chargers. However, VGIC strongly recommends the Decision explicitly state that

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<sup>3</sup> A.20-10-011. *Joint Motion of the Public Advocates Office, VGIC, Electrify America, LLC, and PG&E for Adoption of Joint Settlement Agreement in PG&E’s DAHRTP Commercial Electric Vehicle Proceeding on Non-NEM Export Compensation Pilot*. Filed June 17, 2022.

<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M488/K538/488538216.PDF>

<sup>4</sup> A.21-12-006 and A.21-12-008. *Administrative Law Judge’s Ruling Regarding Staff Recommendations and Workshop*. Filed June 15, 2022. Attachment A – Energy Division Recommendations.

<sup>5</sup> VGI Strategies Decision D.20-12-029 at 16.

<sup>6</sup> VGI Strategies Decision D.20-12-029 at 20 and 32.

bidirectional chargers can be used for submetering, including for measuring kWh discharged. VGIC believes this is critically necessary based on its recent experience engaging on the issue of submetering for ELRP. In D.21-12-015, the Commission unambiguously directed the three major IOUs to allow submetering for EVSE participating in ELRP Customer Group A.5, EV/VGI Aggregations.<sup>7</sup> However, in subsequent implementation Advice Letters, the IOUs did not comply with this Commission directive.<sup>8</sup> After VGIC and other parties submitted Protests<sup>9</sup> and Energy Division issued guidance directly to the IOUs,<sup>10</sup> they submitted substitute sheets to permit submetering in ELRP Customer Group A.5.<sup>11</sup> Given the IOUs' apparent apprehension toward facilitating submetering, VGIC believes clarity is needed at this time to ensure that bidirectional charging systems are not inappropriately excluded from submetering despite the underlying technology and implementation having been proven feasible through ELRP. Appendix A contains VGIC's proposed FOF and OP revisions to implement our recommendation.

- ii. ***The Decision should clarify that non-residential customers (in addition to MCOR customers) shall not be precluded from participation in submetering after this Decision, even if there are subsequent efforts to address the remaining barriers.***

The PD appropriately states, “it is reasonable to allow submetering for MCOR and non-residential customers, and therefore the utilities shall work to resolve any potential barriers to submetering for MCOR and non-residential customers.”<sup>12</sup> VGIC supports this finding and believes it is essential to unlocking greater participation in non-residential EV-specific rates as well as

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<sup>7</sup> D.21-12-015 at 41.

<sup>8</sup> Joint ELRP Implementation Joint Advice Letters PG&E 6485-E, SCE 4708-E, and SDG&E 3939-E Attachment A at 15 (PG&E), Attachment D at 16 (SCE), Attachment F (SDG&E) at 10.

<sup>9</sup> Protest of VGIC to Joint Advice Letters 6485-E, 4708-E, 3939-E (February 22, 2022).

<https://static1.squarespace.com/static/5dcde7af8ed96b403d8aeb70/t/621661d654000f78c2bf84d0/1645634007397/VGIC%27s+Protest+to+ELRP+Phase+2+Implementation+Joint+Advice+Letter.pdf>

<sup>10</sup> Energy Division's Review and Disposition of *Joint Advice Letter 6485-E et al.* (June 17, 2022).

<sup>11</sup> PG&E, SCE, SDG&E. *Second Substitute Sheet for Joint Advice Letter 6485-E et al.* (April 11, 2022).

<sup>12</sup> PD at 22.

customer adoption of bidirectional charging use cases such as V2B customer bill management. Importantly, the PD then states “these ongoing efforts shall not preclude existing MCOR from participating in submetering if they submit a completed application.” VGIC recommends this requirement should also apply to *non-residential customers*, not just MCOR, such that these non-residential customers can implement submetering beginning 90-days after the Decision as indicated in OP 4. VGIC recommends OP 4 be modified to further clarify and ensure effective implementation of this directive. Appendix A contains VGIC’s proposed modification.

## **B. Implementation**

### **i. OP 2 should be modified to direct the utilities to update their rate tariff sheets in addition to their respective electric rules.**

The PD clearly directs each IOU to file a Tier 2 Advice Letter within 30 days to update their respective electric rules (e.g., Southern California Edison (“SCE”) Electric Rule 18 and SDG&E Electric Rule 19) by adding:

“where electricity is furnished for EV charging, a customer may use the EVSE as a submeter to measure EV charge load, and ancillary EV charging service (i.e., demand response, vehicle-grid integration, etc.). All EVSE used for submetering purposes must meet the requirements established in the Plug-in Electric Vehicle Submetering Protocol.”

VGIC supports this provision, but it is unsure that this is the only rule or tariff change required to unlock submetering for customers. To mitigate against any possible confusion, VGIC respectfully requests the Commission clarify in the Decision that utilities need to modify individual rate tariff sheets – in addition to electric rules – in order for customers to take service on EV-only rates through EVSE submetering. VGIC is concerned about a scenario where, if the existing ruling does not sufficiently direct IOUs to enable submetering on EV tariffs, the IOUs will file Tier 2 Advice Letters updating each of their respective electric rules for metering, but then the IOUs will have to voluntarily update rate tariff sheets before accepting submetering for a customer on a given rate.



For example, PG&E’s Electric Schedule EV, Rate B states, “Applies to all applicable customers with a separately metered BEV or PHEV recharging outlet.”<sup>13</sup> Meanwhile, SDG&E’s Schedule EV-TOU states, “the point of service must contain facilities to separately meter EV charging facilities...”<sup>14</sup> Based on the text in these and other residential and non-residential electric schedules, it is not readily apparent that the submetering option would be available to customers. VGIC believes that the IOUs should be required to make minor modifications to each applicable rate in their Tier 2 Advice Letters to ensure customers can submeter, for example by adding “per the submetering protocol referenced in Rule 18/19” to each rate tariff’s section related to metering. VGIC proposes a corresponding modification to OP 2 in Appendix A.

- ii. **The Decision should direct each IOU to assess and modify DR programs to ensure customers using EVSE submetering are not excluded or otherwise put at a disadvantage relative to customers using separately-metered EVSE.**

As detailed above in Section II.A.i, there has been confusion in recent efforts to promote submetering in ELRP, an out-of-market, emergency reliability DR program. In the case of ELRP, the IOU Terms and Conditions explicitly state that “Upon adoption by the CPUC, the submeter must meet applicable standards established by the CPUC.”<sup>15</sup> However, to mitigate against any future complications in other DR programs, VGIC respectfully requests that the Commission direct each IOU to ensure customers using EVSE submetering are not excluded or otherwise put at a disadvantage relative to customers using separately metered EVSE. Each IOU should file a Tier 2 Advice Letter within 45 days detailing how each active or planned utility DR program or pilot (i.e., those being considered in DR Portfolio Application A.22-05-002, A.22-05-003, and A.22-

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<sup>13</sup> PG&E Electric Schedule EV Residential Time-of-Use Service for Plug-In Electric Vehicle Customers at Sheet 1.  
<sup>14</sup> SDG&E Schedule EV-TOU Domestic Time-of-Use for Electric Vehicle Charging at Sheet 3, Special Condition 2: Metering.  
<sup>15</sup> Energy Division’s Review and Disposition of *Joint Advice Letter 6485-E et al.* (June 17, 2022).

05-004) can accommodate both separately metered and submetered EVSE. The Advice Letters should propose any changes to the DR program or pilot that may be necessary to facilitate customer participation for both types of EV charging customers.

**C. Approved Submetering List**

- The Decision should clarify that a customer may use a device for submetering once it appears on the Approved Submetering List and that no additional approvals are necessary. If this is not the case, the Decision should clarify at which point customers will be made aware of the devices they may use.***

VGIC seeks clarity on whether there are additional steps that a vendor needs to take between getting an EVSE on the Approved Submetering List and that EVSE being available for immediate use by a customer. As written, the PD depicts the Approved Submetering List as the final step in the accuracy testing, certification, and verification process. However, if a device appears on the Approved Submetering List, it is unclear whether it will need to go through additional steps related to data integration, for example. If this is the case, it is unclear how a customer will know when a device on the Approved Submetering List can be used in the field for active submetering. VGIC questions whether additional steps need to be added before a device can be listed on the Approved Submetering List. Alternatively, the Approved Submetering List could include some indication of which devices can be used immediately for submetering and which pass the accuracy standard but are still pending data integration with the utility. Yet another approach could be for the Approved Submetering List to only contain devices deemed accurate and a separate list to be used to indicate which devices are immediately ready for use. In the long term, a unified submeter data backhaul protocol from the meter data management system (“MDMS”) industry may be needed to streamline data integration and reduce manual billing reconciliation.

- ii. ***The Decision should direct utilities to maintain a single list of devices that comply with the applicable accuracy standards rather than duplicate lists.***

In the case that the Approved Submetering List is ultimately used to indicate devices that are deemed accurate but not used to indicate data integration with a specific utility, VGIC recommends a single list be implemented rather than separate lists for each IOU. Since the testing requirements are standardized in the submetering protocol and therefore identical across each IOU, it is likely unnecessary for each utility to maintain its own separate list. Instead, VGIC recommends that the Commission direct the IOUs to collaborate on and maintain a single list of approved submetering devices. One approach would be for one IOU to establish and maintain the list, and for each other IOU to reference it. VGIC believes this will reduce delay, confusion, and soft costs for customers, EV service providers (“EVSP”), and IOUs.

#### **D. EVSE Standards**

- i. ***The Decision should exempt EVSE used for bidirectional charging purposes from the proposed CCS and ISO 15118 requirements to avoid putting an abrupt end to critical ongoing efforts to pilot, demonstrate, and scale bidirectional charging use cases***

VGIC appreciates the Commission’s overarching efforts to promote standardization as a tool to advance TE broadly. However, the PD’s provision requiring CCS and ISO 15118 for all EVSE will directly undermine the Commission’s efforts to promote bidirectional charging as a VGI Strategy pursuant to SB 676. The Commission recently approved PG&E’s request for VGI Pilots, totaling \$11.7 million, that will use CHAdeMO connectors to discharge from Nissan LEAFs.<sup>16</sup> In addition to being able to comply with the CCS requirement, these CHAdeMO connectors do not use the ISO 15118 protocol. Meanwhile, the ELRP program is the only large-

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<sup>16</sup> See Advice Letter 6259-E and Resolution E-5192.

scale driver for V2G operations in California, and there exist over 25,000 bidirectionally-capable Nissan LEAFs in the state that could theoretically support the grid through this critical emergency DR program.<sup>17</sup> Aside from CHAdeMO equipment, early bidirectional CCS chargers will likely use the DIN 70121 communication protocol for bidirectional functions rather than ISO 15118. Lastly, the pending PG&E DAHRTP V2G Export Rate and SDG&E export rate options may soon provide yet another opportunity for customers to meaningfully support the grid during times of stress through bidirectional charging. All other bidirectionally-capable vehicles in California combined amount to a fraction of the Nissan LEAFs currently on California’s roads.<sup>18</sup> With this in mind, VGIC believes that the PD as written would inadvertently put an abrupt stop to key efforts to advance bidirectional charging by removing support for bidirectional chargers using CHAdeMO connectors and CCS connectors that do not speak ISO 15118. Given the limited number of bidirectionally-capable EVs and EVSE, the value in facilitating the nascent bidirectional charging market, and the Commission’s demonstrated priorities to advance these important use cases, VGIC strongly recommends the Commission exempt bidirectional chargers from the CCS requirement and the ISO 15118 requirement at this time. VGIC recommends the Commission revisit the exemption at a later date when CCS-based and ISO 15118-compliant bidirectional charging is more commonplace. VGIC recommends corresponding revisions to FOFs and OP 6 in Appendix A.

- ii. ***The Decisions should align the OCPP 1.6 and ISO 15118 requirements with the CEC’s CALeVIP and NEVI program implementation timelines.***

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<sup>17</sup> See VGIC’s estimates for bidirectional vehicle deployment in September 1, 2021 Opening Testimony in R.20-11-003 a 4-10.

<https://static1.squarespace.com/static/5dcde7af8ed96b403d8aeb70/t/6137a2f643f8bc74a42af9ae/1631036151186/2021-09-01+VGIC%27s+Opening+Testimony+on+Phase+2+Emergency+Reliability+Proposals+-+FINAL.pdf>

<sup>18</sup> *Ibid.*

The requirement that ratepayer-funded and utility-administered EVSE meet OCPP 1.6 and ISO 15118 should align with the CALeVIP and NEVI program implementation timelines. The CEC is requiring Level 2 chargers to meet OCPP 1.6 and ISO 15118 by September 1, 2022 and July 1, 2023, respectively. For DC fast chargers, the CEC is requiring OCPP 1.6 and ISO 15118 by September 1, 2022. Meanwhile, the U.S. Department of Transportation Notice of Proposed Rulemaking regarding NEVI standards and requirements would also require OCPP and ISO 15118. The CEC and California Department of Transportation draft NEVI Deployment Plan states that projects will commence in Q2 and Q3 of 2023. With this in mind, VGIC recommends that the Commission attempt to align its OCPP and ISO 15118 requirements with one or, if possible, both the CALeVIP and NEVI timelines to send clear regulatory signals and reduce confusion in the marketplace.

- iii. **OP 6 should be modified to clarify that “ratepayer-funded or utility-administered programs” refers to rebates for ratepayer- or LCFS-funded EVSE rebates and does not include DR programs or pilots, VGI programs or pilots, and EV rates.**

As written, OP 6 imposes requirements related to all EVSE qualified for ratepayer-funded or utilities-administered programs. VGIC is concerned that the term “utility-administered programs” is too broad and could be interpreted to include DR programs and pilots, VGI programs, rates, and pilots, and uses of ratepayer funds for TE-related “make ready” upgrades other than EVSE (e.g., panel upgrades, trenching, conduit, etc.). Under this interpretation, existing customers with CHAdeMO chargers, Level 1 chargers, and chargers that do not speak ISO 15118 would be shut out of participation in ELRP, VGI programs and pilots, and other utility DR programs and pilots. This would result in significant lost opportunities to reduce peak demand, integrate renewable energy generation, and support the grid during times of extreme stress. VGIC recommends OP 6

be revised as shown in Appendix A to ensure California can maximize the cost-effective use of VGI pursuant to SB 676.

- iv. ***The Decision should reference existing standards for bidirectional chargers to promote marketplace awareness.***

The PD discusses and directs standardization around OCPP and ISO 15118 as common protocols for ratepayer-funded and utility-administered EVSE. However, VGIC notes that bidirectional DC EVSE seeking interconnection under Rule 21 are also subject to certain communication standards. Beginning in spring 2023 with the implementation of UL 1741 SB, distributed energy resources (“DER”) including bidirectional DC EVSE must be able to speak DNP-3, SunSpec Modbus, or IEEE 2030.5. To promote general awareness in the marketplace, VGIC recommends that the Decision reference these communication protocols in addition to the discussion on OCPP and ISO 15118.

#### **E. Telematics**

- i. ***The Decision should reference the numerous party comments related to telematics and include corresponding FOF.***

VGIC recognizes that the record related to vehicle telematics in this proceeding may not be as well-developed as the record related to EVSE submetering. However, it remains unclear why party comments related to telematics are entirely absent from the PD’s discussion, FOF, Conclusions of Law (“COL”) and OPs. Party comments in this proceeding highlight that using vehicle telematics represents an effective strategy to manage charging, can complement networked EVSE program participation, and is being implemented around the country to result in up to 95%

off-peak charging.<sup>19</sup> Critically, using telematics can support equity, customer choice, and access by expanding program and rate participation to customers with non-networked EVSE, those who use Level 1 charging, and those who may simply prefer to participate via vehicle telematics rather than networked EVSE.<sup>20</sup> To unlock telematics as a tool to yield customer, ratepayer, utility, and societal value, VGIC recommends (1) the topic of vehicle telematics be discussed and referenced in the Decision and (2) FOF, COL, and OPs be modified accordingly.

Since the issuance of the Draft TE Framework (“TEF”) and filing of the Final EV Submetering Protocol (“EVSMP”), the lines between non-TEF and TEF topics (and between different TEF topics) have been blurred.<sup>21</sup> A reasonable scope of comments and filings in the DRIVE proceeding – including those discussing telematics – should therefore be considered in the record for the purposes of this Decision. VGIC believes it is appropriate to consider and reference the following comments and filings in the DRIVE proceeding that provide information related to telematics:

- Comments on TEF Sections 9, 10, and 12<sup>22</sup>
- Reply Comments on TEF Sections 9, 10, and 12<sup>23</sup>

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<sup>19</sup> See, for example, *Comments of WeaveGrid on “Revised TEF” / TE Funding Cycles & Behind-the-Meter (“BTM”) Rebate Program Staff Proposal* at page 4 and *Reply Comments of VGIC on “Revised TEF” / TE Funding Cycles & Behind-the-Meter (“BTM”) Rebate Program Staff Proposal* at pages 4-5, including footnote 8 showing listing VGI programs using EVSE submetering *and* vehicle telematics and footnote 9 containing studies that show value in offering both EVSE submetering *and* vehicle telematics options

<sup>20</sup> For example, commercial fleet owner/operators that pay for all charging when employees take home vehicles to charge overnight.

<sup>21</sup> Since the 2020 Draft TEF comment periods, the Commission issued the VGI Strategies Decision 20-12-029, EV Infrastructure Rules Resolution E-5167, and several other key Decisions and Resolutions. In the VGI Strategies Decision, the Commission considers party comments on “VGI-related topics in the Draft TEF”, comments in response to July 20, 2020 ALJ ruling seeking comments on VGI WG report, and the contents of VGI WG report itself. In Resolution E-5167, the Commission addresses both Responses/Protests on the ALs as well as comments on January 15, 2021 Assigned Commissioner’s Ruling Regarding Implementation of AB 841. Subsequently, Commissioner Rechtschaffen’s February 25, 2022 Assigned Commissioner’s Ruling Adding Staff Proposal to the Record and Inviting Party Comments discusses the interactions between AB 841 and the Draft TEF and suggests that the EV Infrastructure Rules have deemed sections of the Draft TEF irrelevant. Moreover, the Submetering PD itself references comments on the submetering protocol as well as comments on topics in the TEF.

<sup>22</sup> See *Comments of VGIC on TEF Sections 9, 10, and 12* at 4-5, 11, and 16-17 detailing vehicle telematics as a low-cost metering solution.

<sup>23</sup> See *Reply Comments of VGIC on TEF Sections 9, 10, and 12* at 7-8 detailing vehicle telematics as a low-cost metering solution.

- Comments on VGI Issues<sup>24</sup>
- Comments on the “Revised TEF” / TE Funding Cycles & Behind-the-Meter (“BTM”) Rebate Program Staff Proposal<sup>25</sup>
- Reply Comments on the “Revised TEF” / TE Funding Cycles & BTM Rebate Program Staff Proposal<sup>26</sup>
- Comments on Draft Resolution E-5167<sup>27</sup>
- PG&E Advice Letter 6226-E and Non-Standard Disposition Letter Approving PG&E’s 2021 LCFS Holdback Implementation Plan<sup>28</sup>
- SCE Advice Letter 4542-E Requesting Approval for Proposed VGI Pilots<sup>29</sup>
- SDG&E’s 2024-2027 DR Portfolio Application – while not filed in the DRIVE proceeding – also discusses telematics-based VGI<sup>30</sup>

Below are notable telematics-related findings from these filings that VGIC believes should be referenced in the Decision:

“A recently published Opinion Dynamics study for PG&E’s service territory found that both vehicle telematics and EVSE are valuable technologies for responding to demand response events.”<sup>31</sup>

“Notably, many of these example programs publish a list of eligible equipment, and utilities offering both vehicle telematics and EVSE submetering pathways, as expected, have the

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<sup>24</sup> See Joint Comments of VGIC, Enel X, AEE, CESA, Chargepoint, EDF, Greenlots, NRDC, Siemens on VGI Issues at 18 detailing vehicle telematics as a valuable data source for measuring success of VGI strategies.

<sup>25</sup> See Comments of VGIC on Staff Proposal at 13-14, including footnote 21 listing VGI programs using EVSE submetering *or* vehicle telematics; Comments of WeaveGrid on Staff Proposal at 4 and 8 detailing Baltimore Gas & Electric, Xcel Energy, and Portland General Electric telematics programs, PG&E’s Resilient Charging Pilot, and SCE’s proposed Large-Scale Residential VIG Pilot; and Comments of Alliance for Automotive Innovation on Staff Proposal at 9-10, including footnote 5 detailing Duke Energy’s Managed Charging Pilot.

<sup>26</sup> See Reply Comments of VGIC on Staff Proposal at 4-5, including footnote 8 showing listing VGI programs using EVSE submetering *and* vehicle telematics and footnote 9 containing studies that show value in offering both EVSE submetering *and* vehicle telematics options; and Reply Comments of WeaveGrid on Staff Proposal at 4-5, including footnote 3 citing the CEC’s recent managed charging study and footnote 4 citing BG&E’s telematics program evaluation.

<sup>27</sup> See Comments of VGIC on Draft Resolution E-5167 at 8 detailing benefits of enabling comingled EV and site load through EVSE submetering or vehicle telematics.

<sup>28</sup> See PG&E’s Resilient Charging Pilot relying on vehicle telematics.  
[https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC\\_6226-E.pdf](https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC_6226-E.pdf)

<sup>29</sup> See SCE’s proposed Large-Scale Residential VIG Pilot using vehicle telematics.

<sup>30</sup> See SDG&E DR Portfolio Application in A.22-05-003 detailing an EVSE submetering and vehicle telematics-based EV DR Pilot.

<sup>31</sup> Reply Comments of WeaveGrid on Staff Proposal at 4. Cites *PG&E Electric Vehicle Automated Demand Response Study Report*. Opinion Dynamics, February 2022. CALMAC Study ID PGE0469.01. <https://opiniondynamics.com/wp-content/uploads/2022/03/PGE-EV-ADR-Study-Report-3-16.pdf>



largest list of eligible equipment and, in turn, offer the greatest amount of customer choice and access.”<sup>32</sup>

“As part of the rates program, customers using telematics are charging more than 95% off-peak.”<sup>33</sup>

“[Telematics] would especially benefit Low and Moderate Income EV drivers by giving the opportunity to save money on charging without any incremental costs.”<sup>34</sup>

“Utilizing lower power and non-networked charging equipment has important equity and access benefits”<sup>35</sup>

“Telematics supports more choices in charging for customers participating in managed charging programs. Telematics solutions are compatible with networked Level 2 charging as well as non-networked and/or Level 1 while enabling customers to participate in managed charging programs.”<sup>36</sup>

In Appendix A, VGIC recommends new FOFs to better encapsulate the existing record on telematics.

- ii. ***The Decision should direct Energy Division staff to host a workshop within 60 days to discuss telematics, prepare a workshop report, and seek comments on the workshop report.***

As noted above, telematics has been detailed in numerous party comments as an important VGI strategy. However, we recognize that the Commission likely needs additional details on telematics before enabling its use for customer billing purposes. To address these outstanding issues, VGIC recommends the Commission direct Energy Division staff to host a workshop within 60 days to discuss telematics, including an overview of the technology and capabilities, opportunities for telematics to support California’s TE and grid decarbonization goals, examples

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<sup>32</sup> Reply Comments of VGIC on Staff Proposal at 5. Cites list of VGI programs offering both EVSE submetering and telematics as participation options.

<sup>33</sup> Comments of WeaveGrid on Staff Proposal at 4.

<sup>34</sup> Comments of Alliance for Automotive Innovators on Staff Proposal at 9.

<sup>35</sup> Reply Comments of WeaveGrid on Staff Proposal at 4.

<sup>36</sup> Comments of WeaveGrid on Staff Proposal at 8.

of telematics use, and barriers and recommendations. Staff should consult with stakeholders before finalizing the workshop agenda. Following the workshop, staff should prepare a workshop report within 30 days and parties should be invited to submit formal comments on the workshop report. VGIC suggests a new OP in Appendix A related to implementing this recommendation in the Decision.

### **III. CONCLUSION.**

VGIC appreciates the opportunity to submit these comments on the Proposed Decision. We look forward to further collaboration with the Commission and stakeholders on this initiative.

Respectfully submitted,



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Senior Policy Director

**VEHICLE GRID INTEGRATION COUNCIL**

July 20, 2022

## **Appendix A: VGIC Recommended Modifications to the Proposed Decision**

*Note: Proposed changes are shown in ~~strikeout~~ and underline*

P.22: “These ongoing efforts shall not preclude existing MCOR and non-residential customers from participating in submetering if they submit a completed application”

### **Findings of Fact**

2. An embedded submeter in ~~an~~ a unidirectional or bidirectional EVSE either owned by the customer or a third party and operated and maintained by either the customer or a third party is the best ownership option.

*New FOF:* Decision 21-12-015 has resulted in utilities accepting submetering for both EV charging and discharging for purposes of the Emergency Load Reduction Program.

*New FOF:* Updates to both electric rules and individual rate tariff sheets are necessary to enable EV-only billing pursuant to the EV Submetering Protocol.

*New FOF:* Utility demand response programs and pilots would benefit from submetering.

*New FOF:* The utilities are best positioned to collaborate on a single Approved Submeters List that indicates whether an approved submeter is available for use or pending data integration.

*New FOF:* Telematics is in use today around the country at a significant scale and can lead to up to 95% off-peak charging.

*New FOF:* Expanding program and rate participation has important equity and access benefits

*New FOF:* Telematics can expand program and rate participation to non-networked EVSE, customers who use Level 1 charging, and customers who prefer to participate via vehicle telematics rather than networked EVSE.

*New FOF:* It is reasonable to pursue submetering via vehicle telematics

*New FOF:* Additional understanding of telematics is needed to allow the use of vehicle telematics as PEV submeters for participation in EV-only rates.

*New FOF:* The bidirectional charging market is still nascent and a limited number of bidirectional CHAdeMO and CCS charger models are available currently.

### **Conclusions of Law**

1. Customers or third parties should own, operate, and maintain unidirectional and bidirectional PEV.

3. The Commission should require all PEV submeters – including PEV submeters in bidirectional chargers - to meet the applicable and most up-to-date certificate tests used by CDFA-DMS to

certify submeter accuracy for non-publicly accessible EVSE (i.e., all tests with the exception of display requirements).

5. The Commission should require the utilities to maintain and publish on their websites a shared lists of approved EVSE submeters and/or approved submeter equipment that indicates whether a device has certified accuracy and is pending data integration or has already completed the necessary data integration steps and is ready for immediate use.

12. The Commission should require all ratepayer-funded AC-conductive EVSE to utilize SAE J1772 connectors and DC-conductive EVSE to utilize CCS connectors for light-duty use cases, but the Commission should not extend this requirement to bidirectional EVSE or medium- and heavy-duty EVSE.

14. The Commission should require the utilities to implement the EVSE communication protocols recommended by the CEC and adopted in recent Commission decisions for ratepayer- and LCFS-funded EVSE, but the Commission should not exclude other EVSE from DR programs or pilots, VGI programs or pilots, and EV rates and should not extend this requirement to bidirectional EVSE.

16. While completing the necessary upgrades to the utilities' billing systems, the Commission should require the utilities to perform billing reconciliation for submetered EV charging and discharging customers.

*New COL:* The Commission shall consider outstanding issues related to the use of vehicle telematics for PEV submetering.

### **Ordering Paragraphs**

2. Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, Liberty Utilities (CalPeco Electric) LLC, Bear Valley Electric Service Inc., and PacifiCorp d/b/a Pacific Power shall each file a Tier 2 advice letter within 30 days of issuance of this decision updating their respective electric rules and individual rate tariff sheets to implement the adopted Plug-in Electric Vehicle Submetering Protocol consistent with Section 3 of this decision.

4. Within 90 days of issuance of this decision, Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, Liberty Utilities (CalPeco Electric) LLC, Bear Valley Electric Service Inc., and PacifiCorp d/b/a Pacific Power shall publish a shared list of approved submetering equipment and each begin accepting plug-in electric vehicle submetering applications and shall perform billing reconciliation for residential, non-residential, and multiple customers of record (MCOR) plug-in electric vehicle submetered customers using either unidirectional or bidirectional chargers, while completing the necessary upgrades to their billing systems.

6.

2) By October 2022, all direct current conductive light-duty ratepayer- or LCFS-funded EVSE qualified for light duty use cases in ratepayer-funded or utility administered

programs must be equipped with a Combined Charge System connector with the exception of conductive EVSE capable of bidirectional charging;

4) By July 2023~~October 2022~~, all ratepayer- or LCFS-funded EVSE qualified for ratepayer funded or utility administered programs must be International Organization for Standards (ISO) 15118 ready with the exception of conductive EVSE capable of bidirectional charging. ISO 15118-ready chargers are equipped with onboard hardware that enable high-level communications with the vehicle using ISO 15118. An ISO 15118-ready charger is capable of, at minimum, the following: a) powerline carrier based high-level communications as specified in ISO 15118-3; b) secure management and storage of keys and certificates; c) Transport Layer Security (TLS) version 1.2, with additional support for TLS 1.3 or subsequent versions recommended to prepare for future updates to the ISO 15118 standard; d) receiving remote updates to activate or enable ISO 15118 use cases; e) connecting to a backend network; and f) selecting the appropriate communication protocol used by the vehicle.

*New OP:* Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, Liberty Utilities (CalPeco Electric) LLC, Bear Valley Electric Service Inc., and PacifiCorp d/b/a Pacific Power shall each file a Tier 2 advice letter within 30 days of issuance of this decision detailing how each active or planned utility demand response program or pilot can be modified to accommodate both separately metered and submetered EVSE, and request any necessary changes to these programs and pilots to facilitate customer participation for both types of EV charging customers.

*New OP:* Within sixty (60) days of issuance of this decision, Energy Division staff shall host a public workshop to explore pathways to allow customers to use vehicle telematics as PEV submeters. The Energy Division staff should consult with stakeholders to develop the workshop agenda which should address, at a minimum:

- 1) Overview of technology & capability
- 2) Opportunities for telematics to support California's TE and grid decarb goals
- 3) Example implementations of telematics
- 4) Barriers and recommendations

Within 30 days of hosting the workshop, Energy Division staff shall prepare a workshop report summarizing the issues and parties' positions and recommended solutions to overcome the issues. The workshop report shall be entered into the record and parties shall be invited to submit comments on the workshop report.