



August 17, 2022

Hon. Michelle L. Phillips
Secretary
New York Public Service Commission
3 Empire State Plaza
Albany, NY 12223-1350

RE: Case 18-E-0138: Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure

**Response of the Vehicle-Grid Integration Council (VGIC)
to the Notice Announcing Technical Standards Working Group Meeting**

Introduction

The Vehicle-Grid Integration Council (VGIC)¹ is a 501(c)(6) membership-based trade association committed to advancing the role of electric vehicles (EVs) and vehicle-grid integration (VGI) through policy development, education, outreach, and research. VGIC supports the transition to decarbonized transportation and electric sectors by ensuring the value from EV deployments and flexible EV charging and discharging is recognized and compensated in support of achieving a more reliable, affordable, and efficient electric grid. VGIC appreciates the opportunity to provide response to the Commission's questions in the Notice Announcing Technical Standards Working Group Meeting.

Question 1: How do utilities anticipate using telematics/EVSE to engage with EV load in the next 3 years? If the telematics/EVSE will be used for submetering, what are the necessary attributes of the telematics/EVSE that would give confidence that EV load is measured accurately? What is the state of the market for these products today? What would the testing process look like for evaluating telematics/EVSE meter reading ability?

¹ VGIC member companies and supporters include American Honda Motor Co., Inc., dcbe, Enel X North America, Inc., ENGIE NA, Fermata Energy, FlexCharging, FLO EV Charging, Ford Motor Company, FreeWire Technologies, Inc., General Motors Company, Kaluza, 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/>)

a) Submetering for programs versus rates

First, VGIC would like to highlight the distinction between using the metering capabilities of vehicle telematics and the metering capabilities embedded within EV supply equipment (EVSE) to measure customers' energy consumption for 1) managed charging programs that provide off-bill incentives, versus 2) rates and tariffs that determine the customers' monthly bill.

Under scenario 1, the customer's total usage, including for EV charging and the rest of the home/facility, are billed under the same rate by a utility revenue-grade meter, and the submetered usage for EV charging only affects off-bill incentives (*e.g.*, \$/kWh of off-peak charging, \$/kW of peak load reduction during demand response events) offered by the managed charging program. This type of arrangement has been widely implemented at program-scale around the country, including in New York, without addressing accuracy standards.²

Under scenario 2, the submetered EV charging usage is billed under a different rate schedule than the rest of the home/facility. The total usage is still captured by the primary utility meter, but the utility nets out the submetered EV charging usage to determine the usage of the rest of the home/facility. This arrangement is less common for EV charging than scenario 1 and has only been explored by a few states, with each state following a different approach for accuracy standards as detailed in Appendix B of the Commission's July 14th Order Approving Managed Charging Programs with Modifications (Managed Charging Order).

More stringent accuracy standards (*i.e.*, revenue-grade) have been typical for billing purposes since they are potentially applicable to all customers and inform general rate recovery. However, since managed charging programs are likely separately funded and overly stringent requirements could unnecessarily exclude willing customers from program participation, data only needs to be generally correct in order to encourage broader program participation. Therefore, VGIC does not believe it is necessary for the Commission to adopt submetering

² See, for example: Xcel Energy Colorado [Charging Perks Pilot](#) (pg. 263-267, which uses vehicle telematics to manage EV charging and collect EV charging data; National Grid Massachusetts [Off-Peak Charging Rebate Program](#) (pg. 3), which uses [telematics and networked EVSE](#) (pg. 38) to monitor charging data, providing participants with 3-5 cents/kWh for off-peak charging; National Grid Massachusetts [ConnectedSolutions Program](#), which offers an enrollment incentive and annual credits for demand response participation enabled by vehicle telematics; Eversource and UI Connecticut [Managed Charging Programs](#), which use telematics and networked EVSE to enable demand response participation for customers; Baltimore Gas & Electric Maryland [evPulse](#), which offers annual incentives for smart charging via vehicle telematics; Xcel Energy Colorado, Minnesota, and New Mexico [Optimize Your Charge Program](#), which offers customers an annual bill credit for participation; [Smart Charge Rewards Program](#) in New York, Oregon, Florida, Georgia, and Tennessee, which uses a FleetCarma C2 measurement device plug-in to enable VGI; Duke Energy North Carolina [Managed Charging Pilot](#), which uses vehicle telematics to manage EV charging.

accuracy standards for the recently approved managed charging programs (scenario 1). VGIC's comments below will focus on submetering standards for billing purposes (scenario 2).

b) EVSE submetering

Since the Commission issued the Managed Charging Order, the California Public Utilities Commission issued a Decision adopting a submetering protocol for EVs.³ VGIC is providing a summary of a few key provisions of the submetering protocol for the Commission's awareness:

- Applicable to all residential and non-residential customers, bidirectional charging and discharging, Level 2 and DCFC EVSE, and external submeters (no onboard telematics yet);
- 1 percent in the lab and 2 percent in the field accuracy requirement;
- Submeters must be tested at a Nationally Recognized Testing Laboratory (NRTL) or a comparable facility according to testing procedures developed by the California Department of Food and Agriculture – Division of Measurement Standards (CDFA-DMS);
- Ownership of the submeter is limited to the customer or a customer-selected third-party (*i.e.*, no utility-owned submeters);
- Submeters shall use a WiFi connection or cellular network for data communication;
- Submeters must store data on-site for 30 days and remotely for 90 days to support billing disputes;
- Utilities must enable submetering with manual billing reconciliation within 90 days of the Decision, and incorporate submetering into utility billing systems within 24 months.

As stated in the California Submetering Protocol Decision, the industry has coalesced around accuracy standards of 1 percent in the lab and 2 percent in the field, consistent with the standards under the National Institute of Standards and Technology (NIST) Handbook 44 (HB44).⁴ In the Managed Charging Order, the Commission acknowledged CDFA-DMS's adoption of HB44 standards but noted that "the Commission find that requiring compliance with HB44 in the managed charging programs is premature given that it is not yet a final code."⁵ As stated above, VGIC does not deem it necessary to adopt metering standards for managed charging programs.

³ <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M496/K419/496419890.PDF>.

⁴ <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M496/K419/496419890.PDF>, pg. 15.

⁵ Managed Charging Order, Appendix B, pg. 1-2.

However, the adoption of submetering standards can provide widespread benefits beyond the approved managed charging programs by enabling use cases under scenario 2 described above. For example, submetering can enable EV customers to participate in EV-only time-of-use (TOU) rates without having to install a separate meter.⁶ Additionally, EV customers with vehicle-to-everything (V2X) capabilities currently have to pick between 1) low-cost EV charging (*e.g.*, EV-only TOU rates) that requires a costly separate meter, and 2) key V2X use cases (*e.g.*, backup power and bill management) that require the EV to be on the same service connection and meter as the rest of the home or facility. Submetering would enable EV customers to simultaneously take advantage of these V2X applications and access EV-only rates. Facilitating the adoption and use of these technologies will not only promote transportation electrification by lowering charging costs and enhancing the value proposition of EVs for EV owners, but also encourage VGI use cases that generate savings for all ratepayers.

VGIC believes that adopting the NIST HB44 standards, even if they are only “tentative,” in order to enable EVSE submetering in the near term is preferable to not having these options available to customers at all. To the extent HB44-compliant EVSE submeters fall short of revenue-grade metering standards, the total energy consumption of the site is still measured by a primary revenue-grade utility meter.⁷ Thus, VGIC recommends that the Commission adopt the current NIST HB44 standards for EVSE submetering, instead of developing new standards through the Technical Standards Working Group (TSWG) process laid out in the Managed Charging Order.

Adopting NIST HB44 standards now will help enable EVSE submetering for EV customers in New York in the near term (as opposed to likely the 2025-2026 timeframe as provided by the Managed Charging Order), as well as avoid the market fragmentation that may result from the development and adoption of multiple redundant standards by different jurisdictions. If different states adopt different standards, it will be difficult for the industry to align its product design and development with such standards. Additionally, the HB44 standards may become final before the conclusion of the TSWG’s work in October 2024. If the Commission adopts NIST HB44 standards in the near term, the Commission can simply revise its rules at a later date to reflect any updates to the HB44 standards once they are finalized.

When it comes to testing standards and procedures, VGIC similarly recommends that the Commission learn from existing efforts in California. Any potential testing procedures developed and testing performed by the TSWG would be redundant to efforts that have already been

⁶ Several of the IOUs currently offer whole-home TOU rates with the option for EV-only TOU rates if the customer installs a separate meter.

⁷ For example, California’s Submetering Protocol states that if any issues arise with a customer’s submeter data, the customer should be billed at the primary meter rate for the time intervals during which the disputed charging occurred. See <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M489/K140/489140936.PDF>, pg. 20.

completed to arrive at the accuracy and testing standards adopted in California and would unnecessarily delay the availability of EVSE submetering for EV customers in New York.

c) Telematics submetering

The implementation of onboard telematics as a submetering option can support equity, customer choice, and access by extending the aforementioned benefits of submetering to customers with non-networked EVSE, those who use Level 1 charging, and those who may simply prefer to participate via telematics rather than networked EVSE. However, unlike for EVSE submeters, there is limited publicly available data on the accuracy of telematics-based submeters. More work is needed before onboard telematics can be used for billing purposes to enable EV-specific rates.⁸ Given that EVSE submeters can already be enabled without developing additional standards for accuracy and testing, as discussed above, VGIC recommends that advancing telematics for submetering be the focus of the TSWG. Specifically, the TSWG should consider three sub-issues related to the use of vehicle telematics for billing purposes:

- Accuracy standards: Can OEMs or third-party telematics providers meet the accuracy standard that EVSE submeters meet (*e.g.*, NIST HB44)? Is this necessary, or are there justifications for telematics to meet a higher or lower accuracy standard?
- Testing/verifying accuracy standards: How do you verify that an OEM or telematics provider can meet the adopted accuracy standard? Does each vehicle model need to be type tested at a NRTL or comparable facility? With vehicles receiving over-the-air updates, is there value to testing vehicles/telematics solutions at a third-party lab?
- Geotagging/geofencing charging: How can the utility determine whether the customer is charging at “home base” (*e.g.*, at home for residential customers, or at fleet depots for commercial fleets) or elsewhere (*e.g.*, public charging) and bill the customer accordingly to avoid double counting?⁹

Question 2: Department of Public Service staff is recommending that certain open and interoperable communication standards (Open Charge Point Protocol, ISO 15118) for EVSE be adopted. Please provide feedback on this recommendation.

The Federal Highway Administration’s proposed regulations for the National Electric Vehicle Infrastructure (NEVI) Formula Program would require compliance with OCPP and ISO

⁸ The California submetering protocol does not apply to onboard telematics. Instead, the decision requires stakeholders to convene for a telematics workshop within one year, followed by stakeholder proposals for a telematics protocol or the incorporation of telematics into the submetering protocol.

⁹ For example, under California’s Low Carbon Fuel Standard program, any charging within 110 meters of a home is attributed to that home account, and any charging within 220 meters of a non-residential site is associated with that non-residential site. See https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/guidance/lcfsguidance_19-03.pdf



15118.¹⁰ In the spirit of providing consistent regulatory and market signals, VGIC recommends that the Commission align the OCPP and ISO 15118 requirements with NEVI program implementation timelines if possible.

VGIC appreciates the Commission’s overarching efforts to promote standardization and open protocols as a means to advance transportation electrification more broadly. However, we encourage the Commission to consider a more flexible approach when it comes to bidirectional chargers as the field is evolving rapidly.

VGIC believes there is value in New York facilitating the nascent bidirectional charging market, in order to allow vendors, EV owners, and utilities to develop new programs, business models, and participation pathways for bidirectional charging. However, there are still only a limited number of bidirectionally-capable EVs and EVSEs products available in today’s market. While some of these products are already compliant with ISO 15118 (e.g., Nuvve’s bidirectional DCFC charger), some are not. For example, Nissan LEAFs, which represent the majority of the V2X-capable EVs on the road, today use CHAdeMO connectors that do not use the ISO 15118 protocol. While we recognize that the industry has moved towards CCS connectors, there may be value in providing near-term support for CHAdeMO through a temporary exemption of ISO 15118.

Any near-term efforts to advance bidirectional charging use cases will likely rely on some participation from Nissan LEAFs. Thus, requiring ISO 15118 could effectively eliminate a significant share of the bidirectionally capable EVs and EVSEs available today, thereby delaying market development of an important VGI capability. As such, VGIC recommends the Commission exempt bidirectional chargers from any ISO 15118 requirements at this time. VGIC further recommends the Commission revisit the exemption at a later date when CCS-based and ISO 15118-compliant bidirectional charging is more commonplace.

Question 3: Should the PSC adopt communication, plug type, and other standards that are consistent with the outcome of the June 22 Federal Highway Administration’s Notice of Proposed Rulemaking on the National Electric Vehicle Infrastructure Formula Program?

The proposed regulations for the NEVI Formula Program includes a requirement for EVSE to be equipped with CCS connectors.¹¹ Similar to VGIC’s recommendation regarding ISO 15118 above, VGIC also recommends that the Commission exempt bidirectional EVSE from CCS requirements at this time and revisit the exemption at a later date.

¹⁰ <https://www.federalregister.gov/documents/2022/06/22/2022-12704/national-electric-vehicle-infrastructure-formula-program>

¹¹ <https://www.federalregister.gov/documents/2022/06/22/2022-12704/national-electric-vehicle-infrastructure-formula-program>



Conclusion

VGIC appreciates the opportunity to provide these comments and looks forward to working with the Commission, the joint utilities, and other stakeholders to ensure the success of New York's transportation electrification efforts.

Respectfully submitted,

Ed Burgess

A handwritten signature in black ink that reads "Edward A. Burgess". The signature is written in a cursive style with a prominent flourish at the end.

Senior Policy Director

Vehicle-Grid Integration Council (VGIC)