



September 10, 2021

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

**Comments of the Vehicle-Grid Integration Council (VGIC)
on Proposals for Managed Charging Programs for Mass Market EV Customers**

I. 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 a decarbonized transportation and electric sector 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 comments to the Public Service Commission (PSC) on the investor-owned utilities' (IOUs) managed charging program proposals. We also provide some more overarching feedback on best practices for managed charging programs as well as steps to move beyond simple "V1G" managed charging that should be taken to better integrate EVs into the grid. Our comments are organized as follows:

- General comments on the IOUs' proposed managed charging programs
- The need for additional PSC focus on bi-directional charging options
- Comments on individual IOU managed charging proposals
 - Con Edison

¹ VGIC member companies and supporters include American Honda Motor Co., Inc., dcbel, Enel X North America, Inc., Fermata, LLC., FlexCharging, Inc., Ford Motor Company, General Motors Company, Nissan North America, Inc., Nuvve Corporation, Stellantis N.V., The Mobility House, Toyota Motor North America, Inc., and Veloce Energy, Inc. 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/>).

- National Grid
- Central Hudson
- Orange & Rockland
- NYSEG and RG&E

II. General comments on the IOUs’ proposed managed charging programs

Overall, VGIC is encouraged by the diversity of approaches among the IOUs’ proposals. Experimenting with different program structures will help generate lessons learned and best practices to help inform New York’s transportation electrification strategy going forward. However, we also believe that there are improvements that can and should be considered. As such, VGIC provides the following general recommendations to ensure that the collective set of proposed managed programs are successfully leveraged to support New York’s decarbonization goals:

1. IOUs’ managed charging programs should strive to be technology-agnostic wherever possible

As discussed throughout the individual IOU comments below, there are several technologies and strategies that allow for both the collection of charging data from customers as well as for direct load control of customers’ EV charging. For example, these tasks could be carried out either by the EV’s onboard telematics or by a networked/smart charger. Rather than requiring a single type of technology, programs should allow flexibility by setting minimum technical requirements and making any hardware or software solution that meets those requirements eligible to participate.

2. IOUs’ managed charging programs should prioritize customer experience, including flexible sign-up and opt-out provisions for participants

Robust customer participation is crucial for the ability of the proposed programs to deliver meaningful grid benefits and to generate useful learnings that inform future offerings. However, it is also essential to recognize that the primary role of EVs is to support customers’ transportation needs, not the grid’s needs. As such, to be successful, managed charging programs must be designed in a manner that puts the customers’ perspective first and foremost. VGIC believes this can and should be achieved by giving customers an appropriate incentive and flexibility in terms of their level of participation. VGIC is aware that historically, opt-in load-management programs tend to have lower enrollment rates when compared to opt-out programs. Thus, as a means to maximize participation the Commission could consider requiring managed charging participation a default arrangement for customers participating in EV charging infrastructure programs, while still allowing them to opt-out. However, this could lead to some

unintended consequences in terms of customer experience. As such, VGIC recommends that the focus be on making sure that customers are appropriately rewarded (in addition to any aggregators), either through direct incentives or reduced charging costs. At a minimum, each utility should have a robust plan for marketing and customer outreach – including coordination with EV manufacturers and EVSP companies – to ensure high participation.

3. IOUs should develop managed charging options for other customer segments beyond residential

Residential charging represents only a portion of EV charging. Expanding offerings to EV fleet customers would enable a larger number of EVs, which also includes medium-duty and heavy-duty (MD/HD) EVs with larger battery capacity than light-duty EVs, to manage their load and deliver grid benefits. Fleet customers may also be more sophisticated and more capable of consistently responding to program incentives and dispatch signals. For non-fleet customers, the high rate of home charging thus far is directly related to the lack of public and workplace charging options and therefore may not be representative of the charging behavior of future EV owners. As charging options are expanded and the MD/HD EVs segment continues to grow, especially as New York considers the adoption of California’s Advanced Clean Trucks rule,² utilities should work to ensure that managed charging offerings of these other customer segments are available as soon as possible.

4. There should be data collection and reporting requirements, followed by a structured evaluation

Given the diversity of program structures among the IOUs, clear data collection and reporting requirements will be crucial for a useful comparison between different approaches and will provide transparency to stakeholders as to the performance of each program. Collecting the appropriate data will allow the utilities, the Commission, and other stakeholders to assess what works and what needs to be improved. The Commission should establish clear data collection guidelines and require frequent (e.g., quarterly or every 6 months) reporting on the programs’ progress. At minimum, data collection and reporting for each program should include:

- Number of participating customers/vehicles, broken down by customer segment;
- Participation rates relative to known EV market in each utility territory;
- Share of customers enrolled using networked chargers, vehicle telematics, or other technologies;
- Aggregated load profiles for each customer segment, including:
 - Size and timing of peak load;

² New York State Register, pg. 11. September 8, 2021.
<https://dos.ny.gov/system/files/documents/2021/09/090821.pdf>

- Amount of off-peak charging relative to on-peak charging;
- Average incentives paid to customers per month;
- Estimated benefits of program, including grid benefits and/or avoided infrastructure costs.

After 2 years of program implementation, the IOUs should carry out a structured evaluation to compare program approaches, informed by the data collection efforts discussed above. A structured evaluation would allow the IOUs to glean lessons learned and best practices that could inform potential program modifications to maximize the benefits and cost-effectiveness of the offerings. These efforts should also inform more advanced VGI offerings that deliver more benefits to customers and ratepayers.

III. In addition to managed charging (V1G), the PSC should establish next steps to address barriers and opportunities for bi-directional charging (V2B/V2G)

While VGIC believes the efforts proposed within the IOUs’ managed charging programs are mostly laudable, they are predominately focused on unidirectional charging (i.e., V1G). The grid benefits that EVs can provide via V1G could be substantially augmented through strategic implementation of bidirectional vehicle-to-building (V2B) or vehicle-to-grid (V2G) technologies. V2G can serve as a novel grid resource that provides generation capacity in critical downstate areas (such as NYISO zones J and K) where new transmission and generation is difficult to site. As the number of EVs scales up, this could be a critical tool to aid with summer reliability needs as New York seeks to phase out fossil generation in these constrained areas. Additionally, bidirectional capability unlocks new value propositions, such as backup power in the event of an outage, that V1G simply cannot provide. The programs currently proposed do not adequately address these possibilities and VGIC recommends that the PSC outline a follow-on process to address barriers and opportunities for bi-directional charging. VGIC has been an active participant in the recent development of V2X pilots, programs, and interconnection rules in California and would be eager to share lessons learned from these experiences.

There are a meaningful number of bidirectional-capable EVs and charging equipment that are already or will soon be deployed. The table below summarizes the bidirectional capabilities of both existing and forthcoming V2G-capable EV models and charging equipment.

Product	Deployment	Notes
Nissan LEAF	Available today	24-62 kWh battery capacity, depending on model year ³

³ 2013 Nissan LEAF Press Kit: Overview. <https://canada.nissannews.com/en-CA/releases/ca-2013-nissan-leaf-press-kit>.

Blue Bird V2G-Capable School Bus	Available today	155 kWh battery capacity ⁴
Mitsubishi Outlander PHEV	Available today	12 kWh battery capacity ⁵
Thomas Built Buses Saf-T-Liner V2 Jouley	Unknown	Up to 226 kWh battery capacity ⁶
Ford F-150 Lightning	Spring 2022 ⁷	V2H backup power using 9.6 kW bidirectional charger ⁸
Lucid Motors Air ⁹	Q4 2021/Q1 2022 ¹⁰	
Volkswagen ID ¹¹	2022	
Nuvve PowerPort	Available today	19.2 kW ¹²

2016 Nissan LEAF 30 kWh. <https://www.caranddriver.com/reviews/a15101006/2016-nissan-leaf-30kwh-instrumented-test-review/>.

2022 Nissan LEAF Range, Charging & Battery. <https://www.nissanusa.com/vehicles/electric-cars/leaf/features/range-charging-battery.html>.

⁴ Nuvve Corporation. *Blue Bird Delivers North America's First-Ever Commercial Application of Vehicle-to-Grid Technology in Electric School Bus Partnership with Nuvve and Illinois School Districts*. March 23, 2021. <https://nuvve.com/blue-bird-v2g-electric-bus-with-nuvve-and-illinois-school-districts/>

⁵ Roberto Baldwin. 2021 Mitsubishi Outlander PHEV Gets Bigger Motor and Battery at Same Price. Car and Driver. February 25, 2021. <https://www.caranddriver.com/news/a35605985/2021-mitsubishi-outlander-plug-inhybrid-upgrade/>

⁶ Thomas Built Buses / Daimler Trucks North America LLC (2021). The Safe-T-Liner C2 Jouley Electric School Bus. Retrieved September 1, 2021 from <https://thomasbuiltbuses.com/school-buses/saf-t-liner-c2-jouley/>

⁷ Mark Kane. *Ford F-150 Lightning Reservations Reach 120,000*. InsideEVs. July 28, 2021. <https://insideevs.com/news/523153/ford-f150-lightning-reservations-120000/>

⁸ Ford Motor Company (2021). 2022 Ford F-150 Lightning: Ford Intelligent Backup Power. Retrieved September 1, 2021 from <https://www.ford.com/trucks/f150/f150-lightning/2022/>

⁹ Lucid Motors. *Lucid Air to be the Fastest Charging EV, Featuring 900 V+ Architecture Delivering a Charging Rate of Up to 20 Miles Per Minute*. August 19, 2020. <https://www.lucidmotors.com/media-room/lucid-air-fastest-charging-ev>

¹⁰ Andrei Nedelea. *Is Lucid Preparing to Kick Off Air Dream Edition Deliveries?*. InsideEVs. August 19, 2021. <https://insideevs.com/news/527609/lucid-air-dream-edition-deliveries/>

¹¹ Charles Morris. *VW to enable bidirectional charging on all EVs on its MEB platform starting next year*. Charged Electric Vehicles Magazine. April 8, 2021. <https://chargedevs.com/newswire/vw-to-enable-bidirectional-charging-on-all-evs-on-its-meb-platform-starting-next-year/>.

¹² Nuvve Corporation (2020). Nuvve PowerPort Specifications Sheet. Retrieved September 1, 2021 from: <https://nuvve.com/wp-content/uploads/2020/05/nuvve-powerport-spec-sheet-us-ul-energystar-certified-v5.0-may2020.pdf>

Nuvve DC Heavy Duty Charging Station	Available today	60 kW ¹³
Fermata FE-15	Available today	15 kW ¹⁴
Fermata FE-20	2022	20 kW
dcbel r16	Q4 2021	7.6 kW ¹⁵
Rhombus RES-D2, RES-D3, RES-DCVC60, RESDCVC125	Available today	60-250 kW ¹⁶
Wallbox Quasar	Unknown	7.4 kW ¹⁷

IV. Comments on individual utility proposals

Con Edison

Con Edison is the only IOU that did not propose any new managed charging programs in its filing. VGIC is concerned by this lack of progress, given that ConEd’s SmartCharge NY program has already been under way for several years. As such, ConEd would have had ample opportunity to build upon this strong start by develop additional managed charging program offerings. These could include approaches such as automated load management systems (ALMS), EV demand response (DR), dynamic retail rates, or vehicle-to-grid (V2G), and so on. Expanding the suite of VGI offerings is critical as a means to help accelerate EV adoption by lowering charging costs and enabling new value streams. Moreover, the high cost of distribution infrastructure in ConEd’s territory means there is greater potential to reduce costs for all ratepayers by limiting the impact of EV charging on local system peak loads through VGI capabilities.

Regarding Con Edison’s SmartCharge NY program, VGIC appreciates Con Edison’s inclusion of both light-duty EVs and medium- and heavy-duty (MHD) EVs. MHD EVs have

¹³ Nuvve Corporation (2020). Nuvve DC Heavy Duty Charging Station Specifications Sheet. Retrieved September 1, 2021 from: <https://nuvve.com/wp-content/uploads/2020/04/nuvve-dc-heavy-duty-spec-sheet-1.0.pdf>

¹⁴ Fermata Energy. *Proven Results and Cost Savings with V2G Technology*. October 14, 2020. <https://www.fermataenergy.com/news-press/proven-results-and-cost-savings-with-v2g-technology>

¹⁵ 4 dcbel. dcbel r16 Specifications Sheet. Retrieved September 1, 2021 from: <https://www.dcbel.energy/wpcontent/uploads/ossiaco-data-sheet-2021.pdf>

¹⁶ Rhombus Energy Solutions. V2G Charging, Control, and Management 50-500 kW: Bidirectional. Retrieved September 1, 2021 from: <https://rhombusenergysolutions.com/products>

¹⁷ Wallbox. Quasar DC Charger: Electrical Specifications. Retrieved September 1, 2021 from: https://wallbox.com/en_us/quasar-dc-charger

larger battery packs than light-duty EVs and are usually part of a fleet, which tends to have more control and coordination of charging sessions. Therefore, MHD EVs have more potential to deliver grid benefits with charge management. As the program continues to grow and Con Edison explores new ways to expand participation, VGIC recommends that, in addition to the FleetCarma device, vehicle telematics and networked EVSE equipment be included as options to monitor charging behavior and collecting relevant data. This should be considered for all types of vehicles, not just for vehicles that are incompatible with the FleetCarma device. Many EV's onboard telematics system can enable customers to automate their charging schedule to align with SmartCharge incentives, and allowing billing determinants to be measured through the same telematics system would help save on overall program costs and spread the program budget across more customers. Participation via telematics or smart chargers would also help alleviate some customers' privacy concerns regarding data sharing with another third-party. Ideally, Con Edison should set minimum technical requirements and allow any devices that meet those requirements to participate in the program.

National Grid

Among the IOUs, VGIC found National Grid's proposal to be the most thorough proposal, and lays out detailed program designs, implementation steps, timelines, and evaluation metrics. VGIC particularly commends National Grid's inclusion of technical standards for both telematics- and charger-based participation pathways. As such, VGIC believes National Grid's filing should be considered a model for other New York IOUs to follow in their final program implementation plans. Nevertheless, VGIC encourages National Grid to also continue to explore more advanced VGI offerings, such as demand response, dynamic rates, or V2G, which enables even more flexibility for EVs to deliver grid benefits.

Central Hudson

VGIC is encouraged by Central Hudson's proposal for both passive and active managed charging programs in this proceeding to supplement the utility's existing offerings. Particularly, the proposed active managed charging proposal to incorporate EVs into the Non-Wires Alternatives (NWA) program represents a unique approach among the utilities and will help advance an understanding of the distribution system benefits of VGI in New York. Beyond the existing NWA framework, Central Hudson should also consider how an NWA-like approach could be incorporated into Central Hudson's transportation infrastructure programs. For example, VGIC notes that automated load management systems (ALMS) have been successfully implemented elsewhere to avoid distribution system upgrade costs associated with EV infrastructure deployment.

Based on VGIC's review of Central Hudson's plan, it is unclear whether commercial customers (i.e., fleets) could participate in the active managed charging offering. In its filing,

Central Hudson states that “customers can purchase an on-site facility (*home or nonresidential building*) charger and apply for a qualifying rebate” but also that “active managed charging would be implemented through *residential* direct load control equipment.” Central Hudson should provide clarification and ensure that fleets can participate in the NWA program. Since fleets employ several vehicles and may include MD/HD vehicles with larger battery capacity, they could provide more meaningful distribution system relief during peak events at a single location and thus could represent good candidates for an NWA program. The inclusion of both residential EV customers and fleets would also be consistent with the overall NWA program, which allows residential as well as commercial & industrial customers to participate.

The NWA program is also a good opportunity to implement V2G capabilities, rather than only reducing EV charging load. Especially with fleet customers with MD/HD EVs, V2G would deliver much greater distribution system benefits. Given that Central Hudson already has some experience with active managed charging, Central Hudson should pursue a more advanced VGI use case and incorporate V2G into its NWA program.

In addition, VGIC recommends that the incentive structure includes enrollment and/or monthly incentives, in order to ensure program participation and offset customers’ setup costs, as well as performance incentives for actual load reduction benefits delivered during peak events.

For the passive managed charging proposal, VGIC recommends that the incentives be paid out to participants monthly instead of annually. More frequent incentives would make the benefits of participation more visible to customers and encourage ongoing participation. Similar to the active managed charging program, providing enrollment incentives would also help increase program participation.

Finally, VGIC urges that both offerings allow participation via vehicle telematics, rather than requiring customers to procure networked chargers to be able to participate. Many EVs’ onboard telematics systems already have the same capabilities as networked chargers, including DR capabilities. There is no need to require a specific approach when either option would be able to achieve Central Hudson’s program goals. For some customers, being able to participate via vehicle telematics would even reduce a participation barrier by reducing the need for a networked charger. As such, Central Hudson should establish minimum technical requirements and allow any device, be it networked charger or vehicle telematics, to be able to participate in the managed charging programs.

Orange & Rockland

VGIC appreciates O&R’s consideration of both hardware- and software-based solutions in its proposed managed charging program. VGIC recommends that O&R remains flexible as to the participation pathways customers can choose, rather than requiring a specific approach. Both



networked chargers and vehicle telematics represent capable and cost-effective options to monitor charging behavior and enable customers to schedule their charging with the program incentives. O&R should allow any device or pathway to participate in the managed charging offering as long as they meet the appropriate technical requirements.

Furthermore, compared to the other IOUs' filings, O&R's filing constituted the least detailed proposal. This is especially concerning since O&R's service territory has a higher level of EV penetration than many other locations in the state. VGIC urges O&R to develop a more thorough proposal, with specific details on program structure, incentive levels, implementation steps, and evaluation criteria in order to provide transparency and ensure successful program implementation and evaluation. VGIC also encourages O&R to develop more advanced VGI offerings, including V2G. VGIC is eager to work with O&R staff to develop a more robust portfolio of managed charging offerings.

NYSEG and RG&E

VGIC appreciates NYSEG and RG&E's well-developed proposal that is informed by the IOUs' experience with the OptimizEV Pilot. VGIC is particularly encouraged by the inclusion of multiple options for charging data monitoring and charge management, as well as the inclusion of DR. The incorporation of escalating participation levels is an innovative approach that is flexible to customers' preferences and willingness to commit to charge management.

V. Conclusion

VGIC appreciates the opportunity to provide these comments and looks forward to working with the DOER to ensure the success of the Clean Peak Standard DR Program.

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 initial "E".

Policy Director

Vehicle-Grid Integration Council (VGIC)