



January 31, 2024

Comments of the Vehicle-Grid Integration Council on Massachusetts' DOER Charge Forward Report

Introduction

The Vehicle-Grid Integration Council (VGIC) is a 501(c)(6) nonprofit trade association focused on accelerating the role of smart EV charging and discharging (i.e., vehicle-grid integration or “VGI”) through policy development, education, outreach, and research. Scaling VGI is an essential part of transportation electrification and will help accomplish the following key policy goals:

- **Benefit drivers and fleet owners** by reducing the total cost of ownership.
- **Decarbonize the transportation sector** by accelerating EV adoption.
- **Support decarbonization of the power sector** by providing necessary grid services as renewable energy and distributed energy resource penetration increases.
- **Increase affordability** by reducing electricity bills for all customers.
- **Improve grid resiliency** and security during extreme weather events.
- **Foster economic activity** through innovation, competition, and market transformation.

With the proper policy and regulatory support and coordination, these goals can be achieved, and EV drivers and EV fleets in Massachusetts can play a supportive role in the acceleration of both transportation electrification and grid decarbonization. **Our vision for VGI encompasses the following key elements:**

- **Ensure customer mobility needs are satisfied.** Drivers and fleets can participate in a wide variety of VGI services without compromising their mobility needs.
- **Managed charging will benefit EV drivers and fleet operators:** Drivers and fleets will be given the ability to align charging with the times of day when electricity prices are low, reducing operating costs by as much as 50% compared to unmanaged charging. Lowering the total cost of EV ownership will accelerate overall EV adoption by drivers and fleet managers, helping meet Massachusetts' decarbonization goals.
- **EVs provide emissions-free emergency power during blackouts:** During extreme weather blackouts or other power outages, EVs can utilize bidirectional charging capabilities to send energy to a home, building, or microgrid, serving as a generator and providing safe backup power for households and communities.

- **Charging infrastructure dollars go further:** Smarter management of EV charging can help manage the cost of deploying EV charging infrastructure, which encourages wider access to EV charging.
- **VGI enables EVs to provide valuable services to the grid and generate revenue:** V1G (unidirectional charging) and V2G (vehicle-to-grid, or bidirectional charging) will enable electric vehicles to both receive and feed power back to the grid, supporting advanced grid services such as frequency control, demand response, peak shaving, and more. A number of utilities have implemented programs that provide compensation for these valuable grid services.

VGIC appreciates the opportunity to provide the following recommendation on the Department of Energy Resources’ (“DOER”) *Charging Forward: Energy Storage in a Net Zero Commonwealth* (“Charging Forward Report”).

VGIC recommends the 22-page DOER Charging Forward Report Summary be revised to accurately reflect the full report’s explicit finding that vehicle-to-everything (“V2X”) bidirectional charging technology can support Massachusetts’ energy storage priorities.

VGIC commends the DOER and the Massachusetts Clean Energy Center (“MassCEC”) for commissioning the Charging Forward Report. As VGIC understands, the state’s first energy storage study was conducted back in 2016 and, as noted in the December 2023 Charging Forward Report, “energy storage encompasses a diverse set of technologies capable of absorbing energy, storing it, and later discharging the energy to meet customer and grid demands.” Vehicle-to-everything (“V2X”) bidirectional charging solutions unquestionably fit within this definition of energy storage, and VGIC notes that V2X has been deemed a type of energy storage technology in several other leading jurisdictions throughout the U.S. As such, VGIC supports the following finding in the full Charging Forward Report, which explicitly recognizes the value of V2X (i.e., mobile energy storage) as an energy storage technology alongside stationary energy storage:

“Investment in DERMS and Vehicle-to-Everything (V2X) technologies will also enable flexible load and electric vehicle batteries to provide many of the services of standalone energy storage. Leveraging these sunk-cost resources will be a valuable strategy in right-sizing the Commonwealth’s energy storage buildout and reducing ratepayer costs.”¹

EVs and EV fleets represent latent energy storage capacity that can charge during off-peak hours and help support grid reliability, affordability, decarbonization goals, and community resiliency by discharging when needed most, such as during on-peak hours. Yet, despite the significant

¹ *Charging Forward: Energy Storage in a Net Zero Commonwealth, Prepared for MassCEC and DOER by E3. Full Report. December 2023. Pg. 25.*



energy storage benefits electric vehicles have to offer via V2X and the recognition by the full Charging Forward Report that “[f]lexible load and [V2X] can be considered types of end-user energy storage”, the 22-page DOER Charging Forward Report Summary, issued December 31, 2023, does not make any reference V2X, electric vehicles, bidirectional charging, V2G, V2B, or V2H as types of viable energy storage solution.² Although the market for V2X solutions is in a relatively nascent state, it is VGIC’s understanding that **Massachusetts may, in fact, be *the* leading state for the deployment of V2X bidirectional charging electric school bus sites**, with dozens of such sites currently in development and many more coming. The full Charging Forward report completed by E3 accurately identifies V2X as a viable energy storage solution, which reflects the current reality of growing V2X deployment in Massachusetts. With this in mind, VGIC respectfully urges the DOER to revise its 22-page Charging Forward Report Summary to reflect E3’s explicit finding that V2X is a viable energy storage solution.

Conclusion

VGIC appreciates the opportunity to submit these comments on Massachusetts’ DOER Charging Forward report. We look forward to further collaboration with the Commission and stakeholders in Massachusetts on this important initiative.

Respectfully submitted,

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² Massachusetts DOER and MassCEC, *Charging Forward: Energy Storage in a Net Zero Commonwealth – A Report of the Department of Energy Resources in Consultation with the Massachusetts Clean Energy Center*. Report Summary. December 31, 2023.