August 28th, 2026

VIA ELECTRONIC FILING

Mr. Jeffrey R. Gaudiosi, Esquire
Executive Secretary
Public Utilities Regulatory Authority
10 Franklin Square
New Britain, CT 06051

RE: Vehicle Grid Integration Council Comments on Notice of Request for Written Comments: Docket No. 26-08-05, Annual Energy Storage Solutions Program Review—Year 6

Dear Mr. Gaudiosi:

The Vehicle-Grid Integration Council ("VGIC[1]") respectfully submits to the Public Utilities Regulatory Authority ("Authority") comments in response to the August 12, 2026, *Notice of Request for Written Comments* ("Notice") in Docket No. 26-08-05, Annual Energy Storage Solutions Program Review – Year 6. VGIC's comments are limited to the issues raised in Section 2 of the Notice concerning bidirectional electric vehicle ("EV") participation in the Energy Storage Solutions ("ESS") Program.

[1] VGIC member companies and supporters include American Honda Motor Co., Inc., Ford Motor Company, General Motors, Nissan Group of North America, Bidirectional Energy, BMW of North America LLC, bodeEV, ChargePoint, ChargeScape, Codibly Inc., Critical Loop, dcbel, Eaton Corporation, EnergyHub, Enphase, EV.Energy, Fermata Energy, Mercedes-Benz Research & Development North America, Inc., Orange Charger, Inc., Renew Home, Rivian, Stellantis, SWTCH Energy Inc., Tesla, Texture, The Mobility House, Toyota Motor North America, Inc., UL Solutions, WeaveGrid, Clean Power Alliance, Connecticut Green Bank, Los Angeles Department of Water and Power, MCE, San Diego Community Power, Sacramento Municipal Utility District, and Salt River Project. 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/).

Specifically, the Notice requests comments on the *Bidirectional Electric Vehicle Working Group Report* ("Report"), submitted on July 29, 2026, pursuant to Order No. 20 of the Authority's Final Decision in Docket No. 25-08-05, Annual Energy Storage Solutions Program Review – Year 5, as well as the electric distribution companies' recommended revisions to the interconnection process for bidirectional EV charging systems developed pursuant to the Year 5 Decision.

I. INTRODUCTION

VGIC is a 501(c)(6) membership-based advocacy organization committed to advancing the role of flexible EV charging and discharging through policy development, education, and research. VGIC works to ensure the value from vehicle-grid integration ("VGI") is recognized and compensated to support a reliable, affordable, and efficient energy future.

On March 6, 2026, VGIC expressed interest in becoming a formal member of the Bidirectional EV Working Group ("Working Group"). The Program Administrators ("PAs") subsequently granted VGIC membership in the Working Group. VGIC participated in each of the six meetings held between March and June 2026, met individually with the Working Group facilitator, and provided two sets of written comments on technical topics addressed by the Working Group.[2] In addition, several VGIC members were also members or participants in the Working Group, including: Fermata Energy, ChargeScape, GM, Tesla, Bidirectional Energy, The Mobility House, EnergyHub, WeaveGrid, and ev.energy.

VGIC and members were also active participants in the Connecticut Interconnection Working Group ("IX WG") during meetings to discuss and propose revisions to the existing interconnection procedures to accommodate bidirectional EV charging systems. VGIC met with the IX WG subcommittee and provided annotated redline edits to the joint utilities' initial proposal.[3] VGIC brought best practices for interconnecting both direct current ("DC") and alternating current ("AC") bidirectional EV charging systems from other jurisdictions consistent with IEEE 1547-2018, the technical standard governing distributed energy resource ("DER") interconnection in Connecticut.

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[2] See: *Clarification of VGIC's Recommendations on Technical Standards and Certifications of Bidirectional Charging Systems for the Energy Storage Solutions Programs.* VGIC. May 18, 2026. https://www.vgicouncil.org/s/VGIC_Tech_Standards_Comments_CT_Bidi_EV_WG_Final.pdf and *VGIC Comments in Response to Working Group Facilitator's Request: Proposed Rollout Plan, Proposed Incentives, and Island Requirement.* VGIC. June 29, 2026. https://www.vgicouncil.org/s/VGIC_Comments_PA_Initial-Recommendations_6_29_2026.pdf.

[3] *CT Interconnection Working Group Proposed V2X Guidance Annotated Redlines.* VGIC. May 6, 2026. https://www.vgicouncil.org/s/V2X_IX_JU_redlines_VGIC_5_6_2026.pdf.

VGIC's comments are limited to Section 2 (Bidirectional Electric Vehicle Participation) of the August 12, 2026, *Notice of Request for Written Comments*. **VGIC summarizes its recommendations to the Authority below:**

1. Approve eligible commercial **and residential** bidirectional EV charging systems for participation in the ESS Program beginning in Program Year 6;
2. Adopt the Report's core program, incentive, enrollment, telemetry, Qualified Product List ("QPL"), and DER Management System ("DERMS") recommendations, subject to VGIC's recommended modifications;
3. Apply the existing ESS performance rates and ten-year rate lock to bidirectional EV charging systems, with no separate enrollment incentive;
4. Maintain technology-neutral eligibility for both AC- and DC-coupled bidirectional EV charging systems and avoid communications or safety requirements that would unnecessarily exclude otherwise compliant equipment; and
5. Approve the EDCs' proposed Order No. 25 interconnection revisions, subject to appropriate refinements as implementation experience develops.

VGIC also provides the Table of Contents for its comments below.

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II. COMMENTS IN RESPONSE TO THE AUTHORITY'S FIVE IDENTIFIED BIDIRECTIONAL EV PARTICIPATION ISSUES

The Authority seeks comments on the following issues related to bidirectional EV charging system participation in the ESS Program:

- Whether participation in the ESS Program provides greater overall benefits to ratepayers than participation in Connecticut's managed charging program for bidirectional EVs, assuming participation would be limited to a single program.
- Whether eligibility should initially be limited to commercial bidirectional EVs or whether residential bidirectional EVs should also be eligible beginning in Program Year 6.
- Whether residential bidirectional EVs should be eligible at this time, and, if not, suggest what milestones or conditions should be satisfied before they are incorporated into the ESS Program.
- Whether the Report's recommended technical requirements, including DERMS integration, telemetry requirements, UL certification requirements, and ISO 15118-20 communications standards, are appropriate given current market readiness, interoperability, implementation costs, and expected ratepayer benefits.
- Whether any additional modifications to the ESS Program or the proposed bidirectional EV interconnection process are necessary to facilitate cost-effective participation while maintaining Program integrity and protecting ratepayers.

Below, VGIC provides comments on each of these five issues.

a. Whether participation in the ESS Program provides greater overall benefits to ratepayers than participation in Connecticut's managed charging program for bidirectional EVs, assuming participation would be limited to a single program.

i. Per-Vehicle Capability Under Managed Charging vs Bidirectional Charging

VGIC believes that participation in the ESS Program provides greater overall benefits to ratepayers than participation in Connecticut's managed charging program for bidirectional EV charging systems (assuming participation would be limited to a single program), primarily **because the per-vehicle depth of response for these customers is much less limited under the ESS Program structure.** The June 2024 managed charging program Evaluation, Measurement, & Verification ("EM&V") Report identifies that, in the assessment years, the cost-effectiveness (including as measured by the Ratepayer Impact Measurement or "RIM") of managed charging was relatively low because "off-peak shifting benefits are minimal and most benefits come from peak demand reductions, typically less than 0.2 kW per vehicle: 0.15 kW for

Eversource and 0.01 to 0.08 kW for UI."[4] In contrast, today's commercially available, residential bidirectional EV charging systems offer between 9.6 and 11.5 kW of export capability,[5] while non-residential bidirectional EV charging systems range from 20 kW to 132 kW.[6]

Fundamentally, managed charging provides an opportunity to shift charging that would otherwise occur, for example, during a peak period. The per-vehicle potential for managed charging, therefore, is limited by charging needs, which result from a driver's mobility needs. For example, with an estimated average daily commute of 28 miles and an average 3.3 miles per kWh, weekday travel needs for a residential customer may amount to roughly 8.5 kWh of energy.[7] This is reflected in the June 2024 EM&V Report, which shows low per-vehicle kW peak-demand reductions. Meanwhile, with an average 80 kWh battery[8] and the 9.6-11.5 kW export capabilities, the same residential per-vehicle opportunity for bidirectional EV charging to support the grid is much higher. For example, a two-hour event could see as much as 23 kWh of response. As detailed in the Report, most ESS Program events occurred between 5 PM and 7 PM.[9] Assuming this same customer needs to recharge 23 kWh plus an additional 8.5 kWh for weekday mobility needs, and assuming it recharges at a slower 9.6 kW rate, about 3 hours 20 minutes of charging would be needed within the 12-hour window from 7 PM to 7 AM the following day. Although this is a single back-of-the-envelope calculation using averages for a residential customer, it demonstrates the benefit of ESS Program participation relative to the managed charging program, which is limited to avoiding only a relatively small amount of on-peak charging per vehicle when averaged across the program.

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[4] Demand Side Analytics, LLC and the Cadeo Group. *Connecticut Statewide Electric Vehicle Charging Program: Program Cycle 1 EM&V Report.* Docket 24-08-06. June 16, 2024. Page 190. https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/3bdbc883f8dc04ab85258b3f00498da7/$FILE/ATT%205%20CT_EV_Infrastructure_Program_Cycle_I_EMV_Report.pdf.

[5] Current residential bidirectional EV charging systems certified to UL 1741 SB include offerings from the following providers at the following discharge rates: Ford (9.6 kW), GM Energy (9.6 kW), dcbel (11.0 kW), Wallbox (11.5 kW), and Tesla (11.5 kW).

[6] Current non-residential bidirectional EV charging systems certified to UL 1741 SB include offerings from the following providers at the following discharge rates: Tellus Power Green (20, 30, 40, or 60 kW), Nuvve Corporation (20, 40, 60 kW), InCharge (22, 44, 66, 132 kW), Heliox (60 kW).

[7] True Driving Cost. *Average Commute Distance by State.* Updated August 5, 2026. Data originally sourced from *U.S. Census Bureau, ACS 1-Year Estimates, Table S0801, 2023.* https://truedrivingcost.com/articles/average-commute-distance-by-state.

[8] National Laboratory of the Rockies analysis conducted for California Energy Commission. *A Roadmap to Unlocking the Benefits of Bidirectional Charging.* Docket No. 22-EVI-06, TN #268952. March 5, 2026. Pages 2, 4-5, and Fig. 3. https://efiling.energy.ca.gov/GetDocument.aspx?tn=268952&DocumentContentId=106145.

[9] Report at 14.

ii. The PAs' Recommended Pure Performance-Based Incentive Structure Significantly Mitigates Ratepayer Risk

The Report recommends offering only performance-based incentives to customers, noting that "adopting current performance-based incentive rates helps to ensure that incorporating bidirectional EVs will not adversely affect the program RIM."[10] VGIC strongly supports the use of a performance-based incentive model to mitigate the risk of a RIM below 1.0. As a result, integrating bidirectional EV charging systems, if offered the same performance rates as ESS, represents a relatively low-risk opportunity for affecting ratepayer benefits.

iii. Connecticut EV Registration Data Shows Significant Technical Potential Based on Specific Models Offering Bidirectional Charging Features

The potential scale of this opportunity is significant. The Authority has explicitly acknowledged the benefits of bidirectional EV charging systems as a type of energy storage in the past, noting in the Docket No. 25-08-05 Annual Energy Storage Solution Program Review—Year 5 decision:

> "Allowing bidirectional EVs into the ESS Program offers significant benefits. Such participation expands the Program's ability to provide peak shaving, increases overall system benefits to all ratepayers, and reduces the total cost of EV ownership."[11]

Similarly, numerous other jurisdictions have acknowledged the opportunity to use the energy storage capacity of EVs purchased primarily for transportation as a dispatchable grid resource. This functionality is currently recognized through virtual power plant ("VPP") and demand-response programs in Massachusetts,[12] Colorado,[13] Maryland,[14] Texas,[15] and California.[16]

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[10] Customized Energy Solutions, submitted by Energy Storage Solutions Program Administrators. *Integrating Bidirectional Electric Vehicles into the Energy Storage Solutions Program* ("Report"). July 29, 2026. Page 60.
[11] Public Utilities Regulatory Authority, December 17, 2025, Docket No. 25-08-05 Annual Energy Storage Solutions Program Review—Year 5, Decision, page 45.
[12] The technology-agnostic, event-based dispatch *ConnectedSolutions* program offered by National Grid and Eversource in Massachusetts is now open to bidirectional charging customers. See: Businesswire. *Partnership with EnergyHub, Sunrun, and The Mobility House to Test Massachusetts Residential Vehicle-to-Grid Program for Eversource and National Grid Customers.* July 23, 2026. https://www.businesswire.com/news/home/20260723542704/en/Partnership-with-EnergyHub-Sunrun-and-The-Mobility-House-to-Test-Massachusetts-Residential-Vehicle-to-Grid-Program-for-Eversource-and-National-Grid-Customers.
[13] Xcel Energy. *Aggregator Virtual Power Plant Program.* https://co.my.xcelenergy.com/s/business/cost-savings/aggregator-virtual-power-plant. Accessed August 11, 2026.
[14] Public Service Commission of Maryland. *Second Order on DRIVE Act Program Proposals.* June 29, 2026. https://webpscxb.pscmaryland.com/DMS/case/9761.
[15] ERCOT. *Aggregate Distributed Energy Resource (ADER) Pilot Project.* Accessed August 11, 2026. https://www.ercot.com/mktrules/pilots/ader.
[16] See: California Energy Commission. *Demand Side Grid Support Program.* Accessed August 11, 2026. https://www.energy.ca.gov/programs-and-topics/programs/demand-side-grid-support-program; California Public Utilities Commission. *Emergency Load Reduction Program.* Accessed August 11, 2026.

Additionally, New Jersey's Board of Public Utilities' straw VPP proposal includes bidirectional EV charging systems as a potentially eligible technology for the VPP Interim Program (2027 – 2029).[17]

Meanwhile, the commercial availability of bidirectional EV charging systems is expanding rapidly. The Report identifies 12 EV models registered in Connecticut that it understands to be offering bidirectional charging features, while noting that the list is illustrative and the market is rapidly evolving.[18] Importantly, automakers are introducing a growing number of bidirectional-capable vehicles, while charger manufacturers and technology providers are bringing compatible residential, commercial, and fleet systems to market. Most early U.S. products have relied on DC bidirectional charging, but recent advances in standards and certification pathways are also creating opportunities for AC bidirectional charging. Although vehicle, charger, software, and interconnection compatibility remain important considerations, the market is moving quickly beyond isolated prototypes toward commercially available systems capable of supporting backup power, site load management, and grid export. VGIC includes a table in Appendix A below summarizing the EVs and charging systems currently offering grid-parallel bidirectional charging features in the U.S. market. In addition to the 20 passenger EV models and five corresponding residential bidirectional EV chargers, five electric school bus manufacturers, and 12 medium-/heavy-duty chargers listed in Appendix A, the following EVs are associated with announced, but not yet available, bidirectional charging features: Hyundai Ioniq 9,[19] Rivian R2,[20] Ford Fathom[21], and Toyota Highlander.[22] This totals 25 models on the market today (several with multiple battery capacity options) from 12 brands, with four additional models from four automotive brands announced for near-term release. EV charger manufacturers that have

https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/demand-response-dr/emergency-load-reduction-program.

[17] Board of Public Utilities and New Jersey Clean Energy Program, July 17, 2026, Straw Proposal: Virtual Power Plant Program. https://nj.gov/bpu/pdf/publicnotice/VPP%20Straw%20Proposal%20Final.pdf.

[18] Report at 13.

[19] Hyundai. *Hyundai Motor Group Expands EV Energy Services with Vehicle to Grid and Vehicle to Home*. November 28, 2025. https://www.hyundainews.com/releases/4634.

[20] EV.com. *$45,000 Rivian R2 Will Power Homes With New Bidirectional Charging Technology.* November 6, 2025. https://ev.com/news/45000-rivian-r2-will-power-homes-with-new-bidirectional-charging-technology

[21] Ford. *Fathom*. Accessed August 11, 2026. https://www.ford.com/electric/fathom/.

[22] Toyota. *Elevated Style Meets Modern Power in the Next Generation 2027 Toyota Highlander.* February 10, 2026. https://pressroom.toyota.com/elevated-style-meets-modern-power-in-the-next-generation-2027-toyota-highlander/.

announced but not yet released bidirectional charging solutions include: Emporia,[23] ChargePoint,[24] Enphase,[25] SolarEdge,[26] and Autel.[27]

Notably, all of the currently available bidirectional charging systems in both the light-duty and medium/heavy-duty segments are certified to UL 1741 SB. This certification ensures compliance with IEEE 1547-2018, thereby facilitating safe and reliable interconnection. All light-duty bidirectional charging system models listed in Appendix A have been enabled for real-world, grid-parallel bidirectional charging through initiatives in at least one of the following states: Maryland,[28] Michigan,[29] Texas,[30] California,[31] and Massachusetts.[32] The medium- and heavy-duty systems have been deployed in grid-parallel bidirectional charging mode in either Virginia, Maryland, North Carolina, South Carolina, Florida, Tennessee, Illinois, Iowa, Michigan, New York, Massachusetts, Maine, Vermont, Colorado, New Mexico, Washington, Oregon, Nevada, or California.[33] Note that to allow customers to operate their bidirectional charging systems in grid-parallel mode, the relevant features must be enabled, which requires the appropriate hardware and software activation by the manufacturer or manufacturer-authorized third-party

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[23] Emporia. *Coming Soon: V2X Bi-Directional Charger.* Accessed January 13, 2026. https://www.emporiaenergy.com/how-the-emporia-v2x-charger-works/.
[24] ChargePoint. ChargePoint and Eaton launch breakthrough ultrafast DC V2G chargers and power infrastructure to accelerate the future of EV charging. August 28, 2025. https://www.chargepoint.com/about/news/chargepoint-and-eaton-launch-breakthrough-ultrafast-dc-v2g-chargers-and-power.
[25] Enphase. *IQ Bidirectional EV Charger.* Accessed January 13, 2026. https://enphase.com/ev-chargers/bidirectional.
[26] SolarEdge. *Intersolar 2023: SolarEdge Unveils New Bi-Directional DC-Coupled Electric Vehicle Charger.* June 14, 2023. https://corporate.solaredge.com/en/this-is-solaredge/news-and-media/local-announcements/new-bi-directional-dc-coupled-electric-vehicle-charger.
[27] Autel. *MaxiCharger DC50.* Accessed August 24, 2026. https://autelenergy.us/pages/maxicharger-dc50.
[28] Sunrun. *Sunrun and BGE Operate Nation's First Residential Vehicle-To-Grid Distributed Power Plant Using Ford F-150 Lightning Trucks,* September 24, 2025. https://investors.sunrun.com/news-events/press-releases/detail/352/sunrun-and-bge-operate-nations-first-residential.
[29] Bill Crider, Ford Motor Company. *Your Next Side Hustle Might Come from Your Parked Electric Vehicle.* October 28, 2025. https://www.fromtheroad.ford.com/us/en/articles/2025/introducing-ford-home-power-management.
[30] Tesla. *What is Powershare Grid Support.* Accessed March 18, 2026. https://www.tesla.com/support/powershare/what-is-powershare-grid-support.
[31] See, for example: Volvo/dcbel. *Powerful. Even when Parked.* Accessed March 18, 2026. https://volvo.dcbel.energy/; Bidirectional Energy. *Join Bidirectional Energy's V2X Charger Program in California.* Accessed March 18, 2026. https://www.bidirectional.energy/learn/california; PG&E. *Vehicle-to-Everything (V2X) pilot program.* Accessed March 18, 2026. https://www.pge.com/en/clean-energy/electric-vehicles/getting-started-with-electric-vehicles/vehicle-to-everything-v2x-pilot-programs.html.
[32] Massachusetts Clean Energy Center. *Vehicle-to-Everything Demonstration Projects.* Accessed March 18, 2026. https://www.masscec.com/masscec-focus/clean-transportation/electric-vehicle-charging-infrastructure/vehicle-to-everything-demonstration.
[33] World Resources Institute. *Latest Lessons from Electric School Bus Vehicle-to-Grid Programs.* May 13, 2025. https://www.wri.org/update/electric-school-bus-v2g-lessons-examples.

after the required utility interconnection study is completed and permission to operate is granted by the utility.

Connecticut already has a meaningful number of EVs deployed offering bidirectional charging capabilities, and that fleet is growing rapidly. VGIC notes that 3,077 EVs registered in Connecticut offer bidirectional charging features.[34] This estimate was developed using a model-specific screening methodology. Rather than assuming that a fixed percentage of the state's EV fleet offers bidirectional charging features, VGIC reviewed Connecticut EV registration data and counted only registrations associated with makes, models, and model years that currently offer grid-parallel bidirectional charging capability in at least one other state. Vehicles that had not yet entered the market (and therefore were not reflected in the available registration data) through 2024 were excluded. Eight of the 20 passenger EV models currently offering bidirectional charging capability had not yet been made available for purchase until 2025 or 2026.

The 3,077-vehicle estimate likely understates the number of EVs offering bidirectional charging features on Connecticut roads today because approximately 21,000 additional battery electric vehicles were registered in the state during 2025 alone.[35] As more models offering bidirectional charging features enter the market, the share of Connecticut's EV fleet capable of providing grid services will continue to grow.

To illustrate the potential grid contribution from the existing fleet, VGIC draws on a recent National Laboratory of the Rockies analysis focused on bidirectional EV charging's technical potential and behavioral response.[36] That analysis assumes approximately 11 kW of charge/discharge capability per light-duty EV and found that approximately 53% of vehicles would be available to discharge at least once per week. Under the grid-parallel, non-exporting configuration modeled in the analysis, the resulting average realized contribution was approximately 2.12 kW per available vehicle.

Table 1 provides the results of applying these assumptions to the estimated 3,077 EVs registered in Connecticut through 2024 that offer bidirectional charging features.

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[34] CT Data, Electric Vehicle Registration Data Accessed on August 23, 2026. https://data.ct.gov/Transportation/Electric-Vehicle-Registration-Data/y7ky-5wcz/about_data.

[35] EValuateCT, Market Overview, Accessed on August 23, 2026. https://app.powerbi.com/view?r=eyJrIjoiYjk4YmVkNmQtM2JlNi00Yjc5LTg3NmUtYmM5YTFjOThiNThjIiwidCI6IjFiYjQ4ZGE0LTMxNDMtNDAzMS1iZGFlLWNjYzA0MDc1MDhmZSIsImMiOjF9.

[36] National Laboratory of the Rockies analysis conducted for California Energy Commission. *A Roadmap to Unlocking the Benefits of Bidirectional Charging.* Docket No. 22-EVI-06, TN #268952. March 5, 2026. Pages 2, 4-5, and Fig. 3. https://efiling.energy.ca.gov/GetDocument.aspx?tn=268952&DocumentContentId=106145.

Table 1: Estimated Aggregate Bidirectional Charging Capacity Based on Vehicle Registration Data[37]

	Vehicles	kW/vehicle	Aggregate capacity
Connecticut bidirectional EVs registered through 2024: nameplate capacity	3,077	11 kW	33.8 MW
Connecticut bidirectional EVs registered through 2024: nameplate capacity: at NLR 53% availability assumption and 2.12 kW realized contribution	1,631	2.12 kW	3.5 MW
If the entire current Connecticut EV fleet were leveraging bidirectional charging systems: at NLR 53% availability assumption and 2.12 kW realized	38,556	2.12 kW	81.7 MW

These figures should be viewed as a conservative snapshot rather than a forecast of the resource available if bidirectional EV charging systems become eligible for ESS. For context, the 33.8 MW of nameplate bidirectional EV charging capacity represented by vehicles registered through 2024 alone is equivalent to approximately 5.8% of the ESS Program's 580 MW deployment goal.

With this in mind, VGIC posits that the overall potential benefit to ratepayers of including bidirectional EV charging systems in the ESS Program is significant if customers adopting this type of energy storage solution are provided only performance-based incentives to support a >1.0 RIM.

iv. The PAs' Concerns Over Administrative Burden are Mitigated by Tangible Volume, Leveraging Existing DERMS Integrations, and Leveraging Existing QPLs.

VGIC acknowledges that, as stated in both the Report and the attached Bidirectional EV Working Group Meeting Notes ("Meeting Notes"), integrating new types of energy storage into the ESS Program will yield administrative costs. Specifically, the Report, in its *Key Considerations Informing the Recommendations*, notes:

[37] VGIC offers these figures as a bounded, Connecticut-specific estimate to demonstrate the value in pursuing bidirectional charging at this time. Note that this estimate does not account for whether an individual customer has any necessary charging equipment, software or applicable interconnection agreement.

> "ESS is not a pilot program. The importance of distinguishing between pilots and programs designed to operate at scale is underscored by PURA's creation of the IES program. Integrating bidirectional EVs requires the same administrative infrastructure as any other ESS resource: DERMS integration, QPL management, enrollment processing, and performance verification. That infrastructure carries real cost, and the Program Administrators assert that line of sight to a tangible volume of standardized enrollments is required to ensure cost effectiveness and overall success."[38]

VGIC understands that there are real administrative costs incurred by expanding the ESS Program to include this type of energy storage technology. Regarding DERMS integration costs, however, VGIC notes that common DERMS providers, such as Uplight and EnergyHub, offer integrations with a variety of EV and EV charger manufacturers, including those listed in Appendix A and those with upcoming bidirectional EV charging systems.[39] Moreover, the Report recommends – and VGIC supports – that any bidirectional EV charging system eligible for the ESS Program must be capable of integration with the PAs' DERMS platform. This further mitigates the risk of outsized administrative burden by deeming systems too administratively costly to enroll and dispatch ineligible. Regarding QPL management costs, VGIC urges the PAs, if bidirectional EV charging systems were included in the ESS Program, to familiarize themselves with the existing "gold standards" for bidirectional EV charging system lists: Pacific Gas and Electric Company's ("PG&E") *Vehicle-to-Everything (V2X) Program: Eligible Product List for the V2X Residential Program* and *Vehicle-to-Everything (V2X) Program: Eligible Product List for the V2X Commercial Program,*[40] as well as the California Energy Commission's *Vehicle-to-Grid Equipment List (V2GEL).*[41]

Most importantly, regarding the PAs' assertion that **"line of sight to a tangible volume of standardized enrollments is required to ensure cost effectiveness and overall success"** (emphasis added), VGIC agrees on the importance of this tangible volume. Our analysis above of the existing fleet of vehicles offering bidirectional charging features, even excluding 2025 and 2026 vehicle sales, affirms that this tangible volume is available today across Connecticut, awaiting a clear, reliable price signal to unlock it for the benefit of all Connecticut ratepayers.

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[38] Report at 61.
[39] *See, for example:* Uplight. *Partners, Original Equipment Manufacturers (OEMs): EV and EVSE.* Accessed August 24, 2026. https://uplight.com/partners/ and EnergyHub. *DER Partner Ecosystem.* Accessed August 24, 2026. https://www.energyhub.com/der-partner-ecosystem.
[40] PG&E. *Vehicle-to-Everything (V2X) Program: Eligible Product List for the V2X Residential Program* and *Eligible Product List for the V2X Commercial Program.* Accessed August 24, 2026. https://www.pge.com/en/clean-energy/electric-vehicles/getting-started-with-electric-vehicles/vehicle-to-everything-v2x-pilot-programs.html#hourly-flex-pricing.
[41] California Energy Commission. *Vehicle-to-Grid Equipment List (V2GEL).* Accessed August 24, 2026. https://v2gel.energy.ca.gov/.

b. Whether eligibility should initially be limited to commercial bidirectional EVs or whether residential bidirectional EVs should also be eligible beginning in Program Year 6.

i. The Report Discusses How the PAs' Recommended Performance-Based Incentive Model Specifically Mitigates Ratepayer Risk Associated with Less Predictable Residential Customers

VGIC supports commercial bidirectional EV charging system participation but disagrees with the PAs' recommendation to defer residential bidirectional EV charging system eligibility to a future program year. As detailed in Section II.a.ii. above, there is limited incremental ratepayer risk associated with including residential bidirectional EV charging system customers, given the PAs' proposed pure pay-for-performance structure. The Report notes, and VGIC agrees, that it is "genuinely difficult to predict, in the aggregate, what fraction of enrolled residential vehicles will be available and adequately charged for any given dispatch event."[42] The Report continues:

> "This does not disqualify residential vehicles from the program — the ESS Program's pay-for-performance structure means that **vehicles that miss events simply do not earn for those events, and the Program does not incur a financial loss** — but it does suggest that performance rates for residential bidirectional EVs will likely be lower and more variable than for stationary storage, and that incentive design should account for this." (**emphasis added**).[43]

Since ratepayers do not pay for capacity that does not perform, the risk of adverse impact on ratepayers from residential eligibility in Program Year 6 is minimized. Moreover, the PAs' cost-effectiveness analysis and RIM considerations support the case for residential inclusion, with the Report stating "adopting current performance-based incentive rates helps to ensure that incorporating bidirectional EVs will not adversely affect the program RIM" and "for residential customers, the Program Administrators recommend using the same performance rates and criteria already established for Standard, Underserved, and Low Income customers."[44] The RIM logic, underpinned by the fact that a pure performance-based incentive model protects ratepayers, applies equally to commercial and residential customers. The Report's almost direct link from the RIM statement to the consideration of performance-based incentive rates for both commercial and residential makes this abundantly clear.

[42] Report at 15.
[43] *Id.*
[44] Report at 60.

ii. *The Historic Evaluation of Benefit-Cost Ratios ("BCR") at a Program-Level, Rather than Segment-By-Segment, Supports a Segment-Agnostic Inclusion of Bidirectional EV Charging Systems as an ESS Program-Eligible Type of Energy Storage Technology.*

In discussing benefit-cost ratios ("BCR"), the PAs note that "historically, PURA has evaluated BCRs at the program level, as opposed to setting incentive levels for individual customer segments to achieve cost effectiveness targets for that individual segment."[45] Given cost-effectiveness is not typically assessed on a segment-by-segment basis, this further calls into question the rationale for excluding residential customers in Program Year 6.

iii. *The Lower Customer Technology Costs of Residential Bidirectional EV Charging Systems Relative to Stationary Energy Storage Systems Supports the Tangible Volume Sought by the PAs to Overcome Administrative Burden.*

The Report notes that the Participant Cost Test ("PCT") for residential stationary storage is below 1.0, yet residential participation is not only eligible but "remains robust."[46] Residential bidirectional EV charging systems, meanwhile, will predictably reflect lower incremental technology costs from the customer's perspective (e.g., charging station plus home backup integration kits ranging from $1,970[47] to $9,999[48]) and offer mobility benefits rather than pure home energy management compared to residential stationary storage systems. The report also details that "incremental costs observed today are likely considerably higher than what should be expected in the relatively near term (i.e., 3-5 years)."[49] With additional solutions coming to market soon, including from Rivian, Ford, Toyota, Enphase, and others (see Section II.a.iii. above for the full list), it is reasonable to expect the customer's technology costs to continue declining. Note that the equipment noted above costing only $1,970 (including equipment needed to enable safe islanding for home backup power) is an AC-based solution, and it is the latest product on the market to achieve UL certification for grid-parallel bidirectional charging.[50] VGIC anticipates more AC-based solutions to reflect similarly lower customer technology costs relative to DC-based solutions.

VGIC posits the PCT measurement will be greater for residential bidirectional EV charging systems than residential stationary storage systems. However, regardless of whether that will be the case in practice, residential bidirectional EV charging should not be held to a standard that

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[45] Report at 53-54.
[46] Report at 53.
[47] Tesla. *Tesla Powershare Home Backup Bundle*. Accessed August 24, 2026. https://shop.tesla.com/product/powershare-home-backup.
[48] dcbel. *Ara Core.* Accessed August 24, 2026. https://www.dcbel.energy/product/ara.
[49] Report at 56.
[50] Tesla. *Tesla Powershare Home Backup Bundle*. Accessed August 24, 2026. https://shop.tesla.com/product/powershare-home-backup.

residential stationary storage systems do not currently meet. In other words, if residential stationary storage systems are currently eligible (and participation "remains robust") despite a <1.0 PCT, VGIC questions whether excluding residential bidirectional EV charging systems over speculation about a <1.0 PCT constitutes fair treatment across customers based on their preferences or access to these two different types of energy storage technologies.

iv. The Report's 'Illustrative Project Economics' Uses Conservative Availability Assumptions and Indicates Value for Certain Residential Customers

The Report helpfully provides an "illustrative project economics" estimate, showing a positive net present value ("NPV") for underserved and low-income residential bidirectional EV charging customers (using the PCT framework). The Report states "At the current Construct 5 incentive levels, without enrollment incentives, Residential Projects have a negative NPV, while Underserved and Low Income projects have a positive NPV."[51] This finding – although it is accurately qualified as a "high-level, illustrative finding," "subject to significant uncertainty in all inputs," and "intended to identify key drivers and sensitivities, not directly yield recommendations for specific incentive levels" – does further call into question the Report's overall recommendation to initially exclude residential bidirectional EV charging system eligibility. VGIC notes that in addition to expected costs of bidirectional EV chargers falling as more AC-based systems enter the market, there is an important trend worth tracking regarding which vehicles now offer bidirectional charging features. The Nissan LEAF, Chevrolet Bolt (Model Year 2027), Chevrolet Equinox, Kia EV6, and the announced Ford Fathom[52] are among the least expensive EVs across both the new and used EV markets. Ensuring customers with these lower-priced vehicles are included in the program can help actualize the Report's estimate regarding Underserved and Low Income projects having a positive NPV.

Notably, the NPV calculator uses rather conservative inputs, including a 30% residential availability rate during events. As detailed in Section II.a.iii. above, the National Laboratory of the Rockies' methodology assumes a 53% availability rate for "once per week" discharge.[53] The most consequentially conservative input, however, is the desired morning state-of-charge ("SOC") assumption. VGIC, based on conversations with its ~40 members and utility partners currently implementing managed and bidirectional charging aggregations, believes that a customer's desired SOC each morning is typically below 90-100%. Not just in the illustrative

[51] Report at 57.
[52] Ford. Ford's New Electric Truck Gets a Name That Runs Deep. Accessed August 27, 2026. https://www.fromtheroad.ford.com/us/en/articles/2026/ford-universal-ev-truck-name-reveal.
[53] National Laboratory of the Rockies analysis conducted for California Energy Commission. *A Roadmap to Unlocking the Benefits of Bidirectional Charging.* Docket No. 22-EVI-06, TN #268952. March 5, 2026. Pages 2, 4-5, and Fig. 3. https://efiling.energy.ca.gov/GetDocument.aspx?tn=268952&DocumentContentId=106145.

project economics section, but also elsewhere in the report (Section 3.3 on Charging Patterns, and Section 7.1 on Managed Charging), there is a common heuristic around a customer's desired SOC being relatively high both at the end of each ESS event and in the morning following an event. Generally, this overlooks the ample opportunity for overnight charging. The Report notes that "…the summer 2025 event profile shows that the vast majority of events started at 5 PM, with most running two hours."[54] Assuming an 11.5 kW discharge rate (the highest commercially available residential bidirectional charging rate[55]), a residential driver may discharge 23 kWh during such a "typical" event. This represents an approximately 29% drop in battery SOC using the National Laboratory of the Rockies' assumption of an average 80 kWh battery capacity. Assuming a morning departure time of 7 AM, an average driver would then have 12 hours to recharge that 23 kWh, plus the 8.5 kWh required for an average 28-mile commute. Even using a slower 9.6 kW charging rate, about 3 hours 20 minutes of charging would be required during that 12-hour overnight period.

v. The Report's Representation of Residential Bidirectional Charging as Less Mature than Commercial Bidirectional Charging is a Historically Accurate Claim that No Longer Holds True.

VGIC strongly supports the inclusion of commercial bidirectional EV charging systems in the ESS Program beginning in Program Year 6. The Report accurately notes that electric school buses matured earlier than residential bidirectional EV charging systems. World Resources Institute reports that there are live or in-flight deployments of bidirectional electric school buses across 31 utilities in 21 U.S. states, representing 230 vehicles and 8 MWh of energy storage capacity.[56] The largest active site, 74 buses in Oakland, CA, provides 2.7 MW of peak capacity.[57] As detailed in Appendix A, there are five school bus manufacturers offering bidirectional charging features and four brands of bidirectional charging equipment primarily marketed and deployed for bidirectional electric school bus sites. This progress has been driven by the fact that school buses offer uniquely favorable operating patterns for existing peak-load reduction programs because they are often parked during summer peak periods.

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[54] Report at 14.
[55] Tesla. *Tesla Powershare Home Backup Bundle*. Accessed August 24, 2026. https://shop.tesla.com/product/powershare-home-backup.
[56] Lisa Baertlein. *Electric school buses tapped to shore up fragile US power grids during summer heat.* Reuters. July 3, 2026. https://www.reuters.com/business/energy/electric-school-buses-tapped-shore-up-fragile-us-power-grids-during-summer-heat-2026-07-03/.
[57] Michelle Lewis. *Oakland is now first in the US to deploy a 100% electric school bus fleet – and it's V2G.* Electrek. August 19, 2024. https://electrek.co/2024/08/19/oakland-is-now-first-in-the-us-to-have-a-100-electric-school-bus-fleet-and-its-v2g/.

However, this does not establish that *commercial* bidirectional charging is generally more mature than residential bidirectional charging, as the Report implies, but rather that bidirectional electric school bus projects, specifically, have been deployed earlier. For example, Connecticut's completed IES commercial bidirectional charging project was a school-bus project, while the refuse-truck pilot remains in progress. Meanwhile, residential/light-duty bidirectional charging capability is expanding rapidly, as detailed in Section II.a.iii. above and Appendix A, which contained less than half as many vehicle and charger models just 12 months ago, and only one of those models was offering grid-parallel bidirectional charging features at the time (the rest were limited at the time to home backup power). The residential bidirectional charging market is in fact more mature than the commercial bidirectional charging market, excluding the school bus use case. To this point, VGIC is not aware of any bidirectional charging products actively marketed toward light-duty *commercial* fleets. The PAs' proposed 20 kW-per-port threshold would further narrow initial commercial eligibility toward higher-power fleet applications rather than representing the commercial sector broadly, and this limitation is a further reflection of the current limitations of the commercial segment to the electric school bus segment.

Generally, VGIC understands the tendency to continue representing the commercial bidirectional charging segment as more mature than the residential segment, given the historical precedent. However, new product announcements, open letters from industry leaders pleading for utilities and policymakers to make programs available,[58] significant advances in standards development,[59] and the strong, direct, and active engagement from automakers and aggregators in residential bidirectional EV charging deployments nationwide (including in Connecticut),[60] all paint an increasingly clear picture about the fast-evolving maturity of the residential bidirectional charging market.

VGIC commends the PAs for "acknowledge[ing] the risk of contributing to a 'chicken and egg' paradox: electing to not support a market because it is insufficiently developed while not providing an incentive for the market to develop. Still, the PAs assert that the proposed approach achieves the goal of sustained market development while avoiding the market maturity trap."[61] We strongly urge the Commission to avoid this trap by enabling residential bidirectional

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[58] Wade Sheffer. *Bidirectional EVs are here. Let's invest in them together.* GM News. June 9, 2026. https://news.gm.com/home.detail.html/Pages/news/us/en/2026/jun/0609-bidirectional-evs.html.
[59] Zach Woogen. *Two Critical Links for V2G AC: UL 1741 SC and ISO 15118-20 Amendment 1 Recently Published.* July 29, 2026. https://www.vgicouncil.org/articles/two-critical-links-for-v2g-ac.
[60] Including, but not limited to: Connecticut IES, Massachusetts V2X Demonstration Pilot, PG&E V2X Pilot, Texas ADER, Tesla participation in SCE and SDG&E's ELRP Programs, Puget Sound Energy Residential V2H Pilot, Maryland BG&E Ford Pilot, DTE Michigan, and Vermont Electric Cooperative.
[61] Report at 60.

charging eligibility for Program Year 6 under the PAs' proposed least-risk, purely performance-based incentive structure.

If residential bidirectional EV charging is always envisioned as a tool to be made available "in the future," it will only ever be realized "in the future." CT cannot afford inaction-by-default while the opportunity to save ratepayer money in 2027 slips away. VGIC's alternative recommendation to the Authority is to establish residential eligibility in the ESS Program now, rather than waiting for summer 2028. In VGIC's below response to the Authority's third identified issue, we detail how the PAs' recommended milestones are either inapplicable or should be accepted as potential future program changes, rather than gating items for immediate eligibility.

c. Whether residential bidirectional EVs should be eligible at this time, and, if not, suggest what milestones or conditions should be satisfied before they are incorporated into the ESS Program.

As detailed above, VGIC recommends that residential bidirectional EV charging systems be eligible at this time. We comment below on each of the five milestones proposed by the PAs.

i. Completion of Additional Pilots Should Not Be a Prerequisite to Residential Eligibility.

VGIC commends the Authority for supporting the deployment of bidirectional EV charging systems through its IES program sandbox, a regulatory model that showcases the Authority's leadership and one that VGIC hopes other commissions will follow. Critically, relevant experience is already being generated through the IES pilot and the concurrent Massachusetts Clean Energy Center ("MassCEC") Vehicle-to-Everything ("V2X") Demonstration. IES project funding recipient Bidirectional Energy participated directly in the Bidirectional EV Working Group. VGIC is part of the MassCEC V2X Demonstration team and has also participated in every Working Group meeting and submitted informal comments to the Working Group facilitator to support report development.[62] The Mobility House, the lead technology integrator for the MassCEC V2X Demonstration, was also an active participant in the Working Group, as was, of course, Eversource, who supports the MassCEC V2X Demonstration. So, too, were Tesla, Fermata, ChargeScape, General Motors, and EnergyHub, all of whom are either involved in the MassCEC V2X Demonstration, PG&E's V2X Residential Pilot, Puget Sound's Pilot, SCE's and SDG&E's Emergency Load Reduction Programs, the ERCOT ADER Pilot, or several

[62] See: *Clarification of VGIC's Recommendations on Technical Standards and Certifications of Bidirectional Charging Systems for the Energy Storage Solutions Programs.* VGIC. May 18, 2026. https://www.vgicouncil.org/s/VGIC_Tech_Standards_Comments_CT_Bidi_EV_WG_Final.pdf and *VGIC Comments in Response to Working Group Facilitator's Request: Proposed Rollout Plan, Proposed Incentives, and Island Requirement.* VGIC. June 29, 2026. https://www.vgicouncil.org/s/VGIC_Comments_PA_Initial-Recommendations_6_29_2026.pdf.

smaller demonstration projects across New England, among other states. As a result of this direct and active participation from the relatively small community of experts and real-world implementers, the key lessons from IES and MassCEC activities, and every other residential bidirectional charging demonstration or pilot across the country, have already informed the Working Group and proposed interconnection processes. This is evident in the depth and breadth of the Meeting Notes, as well as the tone of the notes, with few unanswered questions or large, lingering uncertainties from participants. Informed, prudent decision-making is critical to the long-term success of bidirectional charging systems in the ESS Program, and we strongly believe that the Working Group established by the Authority and facilitated by Customized Energy Solutions sufficiently served the purpose of capitalizing on lessons learned from these pilots. VGIC and its members can attest to the comprehensive nature of the Working Group discussions relative to the learnings from both the IES and MassCEC Pilots, both nearing completion. As such, VGIC opposes the PAs' recommendations that "the completion of the Bidirectional Energy IES pilot" and "Further learnings from the MassCEC V2X Demonstration Program" serve as milestones or gating conditions for ESS Program eligibility for residential bidirectional EV charging customers. Alternatively, VGIC proposes that these milestones be deemed met, as the primary implementors of each actively participated in the Working Group, and ensured that the key lessons learned were implicitly incorporated throughout the Report and Meeting Notes.

ii. Managed Charging and Make-Ready Program Coordination Does Not Justify Delaying Residential ESS Eligibility.

As detailed in the Report, the ESS Program and Managed Charging Program compensate different grid actions, and "The Program Administrators find that there is no conflict in the benefits claimed by ESS and Managed Charging."[63] Managed Charging shifts or curtails charging, while the ESS Program compensates for discharge. The current obstacle to enabling dual participation is implementation and coordination, not the issue of duplicative grid value.

VGIC acknowledges that the hurdles to enabling dual participation for customers in these programs are significant. Although VGIC continues to oppose a blanket exclusion of residential bidirectional charging customers in Program Year 6, we do support a temporary prohibition on simultaneous participation in both programs until those operational issues are resolved. Residential customers with eligible bidirectional EV charging systems should be allowed to elect ESS Program participation instead of Managed Charging participation, as long as such election does not violate any other conditions, such as with make-ready or EVSE rebate programs.

Notably, the Report notes that "ensuring that customers enrolled in ESS are also enrolled in the Managed Charging Advanced Tier would allow the EDCs to reduce the adverse timer peak

[63] Report at 38.

impacts of customers seeking to charge following an ESS event."[64] While VGIC is generally concerned with timer peaks (sometimes called "rebound peaks" or "secondary peaks"), it is unclear that this would become a problem exclusive to residential bidirectional EV charging systems, rather than applicable to the entire ESS Program. Similar to Sections II.c.iii. and II.c.iv. below on interconnection and DER co-location, overarching ESS Program challenges should not justify categorical exclusion of a customer group that could offer significant net ratepayer benefits in Program Year 6. Additionally, although the timer peak issue appears in the critical *PA Recommendations for Initial Rollout* section of the Report, it is mentioned only once each in the Meeting Notes and the Report, with the Meeting Notes stating that the facilitator is the party that raised the topic. Given the issue was not raised or commented on by the PAs themselves, who have direct experience with existing energy storage technologies in the ESS Program, nor any other stakeholder in the Working Group, VGIC respectfully requests the issue be disregarded as an example challenge with Managed Charging dual participation.

VGIC also notes that other jurisdictions have adopted a similar pathway to the one we are proposing here: initially prohibiting dual participation, recognizing that supporting residential bidirectional charging customers can yield ratepayer benefits. As detailed in Section II.a.iii. above, automakers and aggregators are supporting grid-parallel bidirectional charging customers in California, Washington, Massachusetts, Maryland, Michigan, and Texas, with a prohibition on participation in managed charging programs as a temporary solution.

Lastly, although we support a temporary prohibition on dual participation, VGIC respectfully urges the Authority to direct the PAs to develop a future pathway for coordinated participation between the two programs. As recommended by the PAs, such future pathway could be considered in a standalone proceeding. Alternatively, this consideration could occur in the 2027 review of the ESS Program, the EV Program, or both.

iii. Interconnection Implementation Does Not Justify Delaying Residential Participation as the Guidelines Apply to Both Residential and Commercial Customers

The PAs recommend that "Successful implementation and application of updated interconnection guidelines" serve as a milestone for residential eligibility.[65] However, the same underlying interconnection framework will apply to both residential and commercial bidirectional EVs. If the proposed Order No. 25 revisions are sufficient to permit commercial participation, gaining implementation experience with those rules cannot fairly be applied as a residential-only prerequisite. Every participating resource must obtain interconnection approval.

[64] Report at 62-63.
[65] Report at 63.

VGIC includes additional discussion on the Order No. 25 compliance filing in Section II.e.iv. below.

iv. Metering and Distributed-Generation Issues Should Be Addressed Without Delaying Residential Eligibility Generally

Co-location with solar creates legitimate metering, tariff, and renewable-energy attribution issues. Those issues arise only for certain site configurations, and the Report accurately notes: "As a practical matter, these issues are not unique to bidirectional EVs and are not created by the ESS Program."[66] The Report continues, stating, "They reflect a policy gap in the treatment of co-located solar and storage that PURA has acknowledged and committed to resolving through future proceedings."[67] VGIC respectfully urges the Authority to accelerate its timeline to address those configurations; however, we do not believe this justifies excluding all residential bidirectional EV charging systems in Program Year 6.

d. Whether the Report's recommended technical requirements, including DERMS integration, telemetry requirements, UL certification requirements, and ISO 15118-20 communications standards, are appropriate given current market readiness, interoperability, implementation costs, and expected ratepayer benefits.

i. VGIC Generally Supports the Report's Recommended Technical Requirements, With Two Exceptions.

VGIC supports the PAs' recommended technical framework for bidirectional EV participation, with modifications described herein. In particular, VGIC supports recognizing the established UL 1741 SB pathway for DC-coupled systems, where the inverter is located off-board the vehicle, and the UL 1741 SC/SAE J3072 pathway for AC-coupled systems, where the inverter is onboard the vehicle. VGIC also supports allowing the UL 1741 Certification Requirement Decision (CRD) for Multipiece DER Systems as an alternative pathway for AC-coupled systems in which a specific EV and EVSE combination is certified together as a composite DER. Providing all three pathways is important for accommodating different system architectures and manufacturers' approaches without unnecessarily favoring any one technology configuration or business model.

VGIC also supports requiring DERMS integration as a condition of ESS participation and the use of port-level telemetry to measure the performance of bidirectional EV charging systems. VGIC supports using the EVSE as the enrolled resource because port-level data provides a practical means of measuring actual discharge and supporting performance-based compensation

[66] Report at 41.
[67] *Id.*

while maintaining consistency with the existing ESS Program framework. The Report recommends generally retaining the same telemetry fields required for stationary storage, while allowing flexibility where certain vehicle-specific data, such as stored kWh, may not be consistently available at 15-minute intervals.

VGIC supports the PAs' recommendation not to require Open Charge Point Protocol ("OCPP") at this time. As the Report recognizes, OCPP 2.1 adds bidirectional charging functionality, but it is not yet widely adopted, and Working Group participants expressed differing views regarding whether it should be mandated. Avoiding a premature requirement reduces the risk of excluding otherwise capable systems while allowing the PAs to revisit OCPP as adoption and implementation experience mature.

VGIC identifies two qualifications to the PAs recommended technical framework, detailed below.

ii. UL 9741 Should Not Be Applied In A Manner That Excludes Otherwise Compliant AC Bidirectional Charging Systems Where The Standard Is Not Applicable.

While UL 9741 applies to systems certified under the UL 1741 CRD for Multipiece DER Systems, it does not apply to the new UL 1741 SC pathway. ESS Program requirements should reflect these differences among certification pathways. VGIC recommends modifying the requirement that all systems meet UL 9741 to allow for AC-coupled systems that cannot be certified to UL 9714, but that *can* be certified to UL 1741 SC (and, therefore, meet all IEEE 1547-2018 requirements), to be eligible for ESS Program participation.

iii. ISO 15118-20 Should Not Become A Rigid Near-term Eligibility Barrier.

Regarding the implementation of ISO 15118-20, VGIC supports the PAs' recommendation to allow exceptions while the certification and testing ecosystem matures. The Report specifically notes VGIC's concern that immediate mandatory compliance could exclude otherwise capable equipment, especially when incentives are proposed to be purely performance-based. This is especially relevant because ISO 15118-20 Amendment 1, which addresses the implementation of bidirectional power transfer, was published only on July 13, 2026, and the associated testing protocols, tools, laboratories, and interoperability events may not yet be sufficiently mature to support strict near-term compliance.

Furthermore, and most importantly, SAE J3072 is protocol- and coupler-neutral and supports multiple open, interoperable EV-EVSE communication approaches for AC bidirectional charging. An August 20, 2026, presentation to California's Smart Inverter Working Group identified SAE J3072 system types using IEEE 2030.5, SunSpec Modbus, and ISO 15118-20

across multiple charging coupler types.[68] This reinforces the importance of maintaining flexibility as the standards ecosystem evolves, rather than prematurely picking a single EV-EVSE communications pathway, when the standards allow for the use of multiple, non-proprietary options beyond ISO 15118-20. The recent transition from CCS to NACS illustrates the risk of selecting a single communications or connector pathway too early, as evolving industry preferences can leave otherwise functional equipment and infrastructure at risk of becoming stranded.

e. Whether any additional modifications to the ESS Program or the proposed bidirectional EV interconnection process are necessary to facilitate cost-effective participation while maintaining Program integrity and protecting ratepayers.

VGIC reiterates its overarching support for the PA Report framework for integrating bidirectional EV charging systems into the ESS Program. With the limited modifications detailed above, the Report's program, technical, and incentive recommendations provide a sound basis for near-term participation while protecting ratepayers and accommodating a rapidly evolving market.

i. EVSE as Unit of Enrollment and Listing in QPL

VGIC supports making the EVSE, rather than the vehicle, the unit of enrollment. The EVSE is the fixed, grid-connected asset associated with a specific location, utility account, and point of interconnection, while the vehicle is mobile and may change over time. This approach avoids unnecessary re-enrollment when vehicles are replaced or when multiple compatible vehicles use the same charger. VGIC also supports retaining an ESS-specific QPL focused on eligible EVSE, with DERMS integration as a condition of listing, as well as maintaining flexibility for different enrollment pathways, including participation through equipment manufacturers, contractors, and third-party aggregators.

ii. Backup Power Requirements

VGIC supports the recommendation that bidirectional EV charging systems not be required to provide islanded backup power during outages as a condition of ESS eligibility. Enabling backup power generally requires additional equipment, controls, installation work, and system configuration, making the system more complex and costly. Requiring this functionality could therefore create an unnecessary barrier to participation and preclude some EV owners from enrolling in the ESS Program. The relevant ESS Program use case is the ability to discharge while operating in parallel with the grid during Active Events, not whether the system can

[68] Mengjia Cao, General Motors, August 20, 2026, SAE J3072 and ISO 15118-20 Amendment AC_DER_SAE, presentation to the California Public Utilities Commission Smart Inverter Working Group, slide 5.

provide backup power during an outage. That said, VGIC does anticipate many ESS Program participants may elect to pursue backup power, as over 5,000 bidirectional EV charging systems have been installed nationwide specifically to provide home backup power.[69]

iii. Performance-Based Incentive Structure

VGIC supports the PAs proposed incentive structure for bidirectional EVs. In particular, VGIC supports:

- **performance-based compensation**, which appropriately aligns participant payments with actual grid value delivered during ESS Active Events and limits ratepayer exposure where a vehicle is unavailable or does not discharge;
- **using the existing ESS performance rates rather than establishing new bidirectional EV charging system-specific rates at this time**, given the limited cost and performance data available for bidirectional EV charging system projects and the PAs conclusion that existing rates provide a prudent starting point;
- **the existing residential Standard, Underserved, and Low-Income performance categories** for residential bidirectional EV charging systems, with current rates of $300/kW, $450/kW, and $550/kW, respectively;
- **the Small/Medium C&I performance rate for eligible commercial bidirectional EVs**, even where the customer might otherwise qualify as Large C&I. The Report recommends $325/kW in Years 1–5 and $175/kW in Years 6–10 in recognition of the nascent state of the technology and associated costs;
- **no separate enrollment incentive at this time**, consistent with the Report's emphasis on performance-based compensation and its concerns regarding uncertain project economics, expected performance, and the difficulty of applying the existing $/kWh enrollment-incentive structure to EVSE-based enrollment; and
- **maintaining the existing ten-year rate lock**, which provides participants and market actors with needed revenue certainty while preserving the principle that compensation remains tied to actual performance.

iv. Approve the Proposed Bidirectional EV Interconnection Process as Presented

VGIC supports the EDCs' proposed revisions in response to Order No. 25 to establish a clear interconnection pathway for bidirectional EV charging systems. The proposed framework appropriately accommodates both DC-coupled and AC-coupled bidirectional EV charging systems and recognizes the applicable UL 1741 certification pathways without creating a

[69] Tesla. *Powershare Bi-directional EV Charging.* 2026 California Public Utilities Commission's Annual Vehicle-Grid Integration Forum. https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/infrastructure/transportation-electrification/vehicle-grid-integration-activities. Event Recording at 1:56:41.

separate or more burdensome interconnection regime for bidirectional EV charging systems. This technology-neutral approach is important because manufacturers are pursuing different system architectures, and eligibility should rely on compliance with the applicable safety and interconnection requirements rather than on whether the inverter is located offboard or onboard the vehicle.

The EDCs' revisions are also consistent with the direction taken in other states. Maryland has codified interconnection requirements for bidirectional charging systems in COMAR 20.50,[70] including pathways for both DC-coupled and AC-coupled systems, and its recently-approved utility VPP programs expressly allow and target bidirectional EV charging systems. Massachusetts[71] and California[72] have similarly established standards-based interconnection pathways that have supported real-world, grid-parallel bidirectional charging participation. These examples reinforce the importance of coordinating program eligibility with interconnection requirements so that a resource recognized by a VPP or storage program can actually obtain permission to operate and discharge. Connecticut is well positioned to do the same.

The proposed revisions would align the ESS Program with the state's existing DER interconnection framework and reduce the risk of case-by-case uncertainty for customers, manufacturers, or aggregators about whether a qualifying bidirectional charging system can interconnect. Without that coordination, ESS could recognize bidirectional EV charging systems in principle while leaving customers unable to participate in practice.

VGIC therefore recommends approving the Order No. 25 revisions, while recognizing that minor refinements may be appropriate as the EDCs gain additional experience interconnecting these systems. The required PowerClerk changes appear modest and, importantly, similar changes have already been implemented to support bidirectional EV charging system participation in the IES pilot. This provides a practical foundation for extending the process to broader ESS participation.

v. Terminology for the Authority and PAs' Consideration

VGIC respectfully recommends that the Authority and the PAs consider using the term "bidirectional EV charging system" in lieu of "bidirectional EV" in all instances. A

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[70] PC44 Interconnection Workgroup. V2G Regulation Proposal. October 30, 2024. https://psc.maryland.gov/wp-content/uploads/Proposed-Regulations-RM87.pdf.
[7171] See, for example: National Grid. *MA Interconnection Documents.* April 16, 2026. https://gridforce.my.site.com/s/article/Interconnection-Documents.
[72] *See:* Public Utilities Commission of California. *Decision Adoption Recommendations from Working Groups Two, Three, and Subgroup.* September 24, 2020. https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M347/K953/347953769.PDF and Public Utilities Commission of California, Energy Division. *Resolution E-5315.* August 22, 2024.

"bidirectional EV" is not a well-defined concept, as modern EVs offer a range of bidirectional charging features, including those that directly power loads from a 120V or 240V plug in the vehicle, those that provide power from a vehicle's charging port to another's vehicle's charging port, those integrated into a customer panel or subpanel in a break-before-make configuration (in which bidirectional charging would only be authorized once the system is electrically isolated from the grid), and those that can support grid-parallel operations through a charging station (which are considered in the Bidirectional EV Working Group, the Report, and these comments).

In contrast, "bidirectional EV charging system," or simply "bidirectional charging system," can more clearly and specifically refer to a system capable of both charging and discharging an EV. This follows the pattern of "energy storage system" and aligns with the standards development organizations' naming conventions, such as the UL 1741 CRD for Multipiece DER *Systems*. Perhaps most importantly, this approach is more closely aligned with the Report's recommendation that the EVSE (or "charging system") be the enrolled unit and the QPL-listed device, not the EV itself.

III. CONCLUSION

VGIC appreciates the opportunity to provide these comments and looks forward to collaborating with stakeholders to expand the deployment of bidirectional EV charging systems within the ESS Program and to help unlock significant, sustained net benefits for ratepayers.

Sincerely,

/s/ Zach Woogen
Zach Woogen
Executive Director
Vehicle-Grid Integration Council
vgiregulatory@vgicouncil.org

/s/ Steve Letendre
Steve Letendre, PhD
Senior Advisor
Vehicle-Grid Integration Council
sletendre@vgicouncil.org

APPENDIX A. CURRENT EVS AND CHARGERS WITH GRID-PARALLEL BIDIRECTIONAL CHARGING FEATURES, INCLUDING EQUIPMENT PRICES WHERE AVAILABLE.

Product	Notes
Nissan LEAF	Model Year ("MY") 2013-2025; Bidirectional charging enabled with $9,999 dcbel Ara.[73]
Ford F-150 Lightning	MY 2022+; Bidirectional charging enabled with $1,310 Ford Charge Station Pro and $3,895 Home Integration System.[74]
Chevrolet Bolt EV	MY 2027; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.[75]
Chevrolet Silverado EV	MY 2024+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Chevrolet Equinox EV	MY 2024+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Chevrolet Blazer EV	MY 2024+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
GMC Hummer EV SUT	MY 2026+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
GMC Hummer EV SUV	MY 2026+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
GMC Sierra EV	MY 2024+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Cadillac CELESTIQ	MY 2025+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Cadillac VISTIQ	MY 2026+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Cadillac ESCALADE IQ	MY 2025+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Cadillac ESCALADE IQL	MY 2025+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Cadillac OPTIQ	MY 2025+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Cadillac LYRIQ	MY 2024+; Bidirectional charging enabled with $7,198 GM Energy V2H Bundle.
Tesla Cybertruck	Bidirectional charging enabled with $1,970 Tesla Powershare Home Backup Bundle.[76]
Kia EV6	MY 2025+; Bidirectional charging enabled with $6,440 Wallbox Quasar 2.[77]
Kia EV9	MY 2024+; Bidirectional charging enabled with $6,440 Wallbox Quasar 2.[78]

[73] dcbel, California Energy Commission. *California Connected Home Rebate.* Accessed January 13, 2026. https://redwds.dcbel.energy/.
[74] Bill Crider. *Your Next Side Hustle Might Come from Your Parked Electric Vehicle.* Ford From the Road. October 28, 2025. https://www.fromtheroad.ford.com/us/en/articles/2025/introducing-ford-home-power-management.
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[77] PG&E. *Vehicle-to-Everything (V2X) Program.* Accessed August 24, 2026. https://www.pge.com/en/clean-energy/electric-vehicles/getting-started-with-electric-vehicles/vehicle-to-everything-v2x-pilot-programs.html.
[78] Kia EV9 x Wallbox Quasar 2. Accessed January 13, 2026. https://wallbox.com/en_us/kia-ev9-quasar-2.

Volvo EX90	MY 2025; Bidirectional charging enabled with $9,999 dcbel Ara.[79]
Polestar 3	MY 2025; Bidirectional charging enabled with $9,999 dcbel Ara.[80]
BlueBird	155 kWh or 196 kWh school buses[81]
BYD / RIDE	156 kWh, 230 kWh, or 288 kWh school buses[82]
IC Bus	210 kWh or 315 kWh school buses[83]
Green Power Motors	118 kWh or 193 kWh school buses[84]
Thomas Built Buses	226 kWh school buses[85]
Tellus Power Green	20, 30, 40, or 60 kW charging equipment[86]
Nuvve Corporation	20, 40, or 60 kW charging equipment[87]
InCharge	22, 44, 66, or 132 kW charging equipment[88]
Heliox	60 kW charging equipment[89]

[79] dcbel, California Energy Commission. *California Connected Home Rebate.* Accessed January 13, 2026. https://redwds.dcbel.energy/.
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