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Honorable Michelle L. Phillips
Secretary
New York State Public Service Commission
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Re: Case 18-E-0138 - Proceeding on the Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure; Comments on Electric Vehicle Make-Ready Program Midpoint Review and Recommendations Whitepaper

EnergyHub, Inc. (EnergyHub) provides the following comments regarding the New York State Department of Public Service Staff Electric Vehicle Make-Ready Program Midpoint Review and Recommendations Whitepaper, filed on March 1, 2023.

I. Introduction

EnergyHub is a software technology company based in Brooklyn, NY. EnergyHub's distributed energy resource management system (DERMS) and program services enable utilities and grid operators to turn fleets of customer-owned distributed energy resources (DER) – residential batteries, connected thermostats, electric vehicles, water heaters, and solar PV inverters – into virtual power plants (VPP). EnergyHub's DERMS platform is used by more than 60 utilities and grid operators to maintain reliability and enable higher penetrations of renewable energy through a variety of innovative grid services. Our portfolio of 70+ residential and commercial VPPs bolsters the reliability and sustainability of the electric system while enabling hundreds of thousands of customers to participate in the energy transition.

With these comments, EnergyHub seeks to illustrate the importance of three key points and inform the Commission's approach to programmatic improvements. These points can be summarized as follows:

- **Focus on flexibility** – To ensure program adoption, the selection and implementation of technical standards should allow a diverse ecosystem of device and solution providers to participate.
- **Foster collaboration** - Facilitate targeted stakeholder discussion of managed charging and V2X frameworks to ensure the seamless transition of existing programming into large-scale, technology agnostic VGI.
- **Leverage software solutions** - Manage the complexity of data collection and reporting processes with a robust software platform capable of supporting a broad array of EV/EVSE providers.

EnergyHub appreciates this opportunity to provide feedback on the Whitepaper and commends Staff for their concerted efforts to make meaningful improvements to New York's nation-leading Make-Ready program. In submitting these comments, EnergyHub draws on its extensive experience with the management of distribution grid assets, including electric vehicles, and looks forward to further opportunities to engage in any forthcoming technical conferences or working group convenings.

II. Focus on flexibility

a. Communications standards

The Commission should orient its selection of communications standards around the state's equity imperatives, ensuring that program participation is not limited by device type or class.

Regarding the adoption of a communications standard, EnergyHub is encouraged by Staff's understanding of the importance of interoperability for seamless and effective program administration. While New York's Make-Ready program is aimed primarily at facilitating the deployment of critical infrastructure, it is important to note that the standards adopted through this program will lay the foundation for the state's administration of more comprehensive EV management programs in the future. It is critical to select technical standards that will enable the growth of the industry without placing undue burden on EV management stakeholders. To that end, the Commission's approach should allow for flexibility as new program types, incentives, customer behaviors, and preferences are explored.

Major network system providers, as noted by stakeholders in their comments submitted prior to the publication of the Whitepaper, advocate for the use of a variety of protocols often paired with specific API integrations. As noted by SEPA in its report, *The State of Managed Charging in 2021*, "with the layering capabilities of these communication protocols, more vendors have begun to use multiple open

protocols along with their proprietary protocols to enhance interoperability and improve integration with existing systems".[1] EnergyHub has seen first-hand the benefit of supporting both proprietary and standards-based integrations in order to maximize the number of EV/SE providers eligible to participate in utility programs.

Addressing this complexity, SEPA has published a report outlining a decision-making process for the selection of a standard, or combination of standards, that enable a variety of programmatic scenarios. For instance, as implemented to date in the DER arena, OpenADR and IEEE 2030.5 have distinct target use cases. OpenADR enables utilities and DERMS providers to communicate with commercial and industrial facilities via building management systems, and is increasingly being leveraged for connecting DERMS providers to downstream DR aggregators and EVSE providers. Conversely, IEEE 2030.5 has gained more traction as a channel for managing inverter-based resources. Additionally, OpenADR is best suited for DR dispatch and charging data collection, rather than the recruitment and processing of customer enrollment data. ISO 15118 handles communications between the EV and EVSE, allowing a vehicle to exchange relevant information with a charger without a specific app or credit card. OCPP, on the other hand, handles communications between charging stations and Charging Station Management Systems.

To manage this complexity, adherence to SEPA's report *Guidelines for Selecting a Communications Protocol for Vehicle-Grid Integration*) may prove useful to working group participants tasked with resolution of this issue moving forward.[2] The Commission should create opportunities for stakeholder discussion of these standards to ensure the delivery of technology agonistic, widely accessible, and cost-effective programmatic outcomes.

b. Battery energy storage and advanced technologies

The Commission should consider the flexibility benefits that collocated energy storage and charging equipment can provide to the grid and ratepayer, and pair the provision of infrastructure Make-Ready incentives with requirements for participation in load management programs.

[1] SEPA, *The State of Managed Charging in 2021*, p. 42., at https://sepapower.org/resource/the-state-of-managed-charging-in-2021/

[2] SEPA, Guidelines for Selecting a Communications Protocol for Vehicle-Grid Integration, August 2020, at: https://sepapower.org/resource/guidelines-for-selecting-a-communications-protocol-for-vehicle-grid-integration/

In keeping with other stakeholders' comments, EnergyHub supports the provision of Make-Ready incentives for upgrades up to the point of interconnection that facilitate the increased deployment of energy storage assets and other advanced technologies. There are many use cases that demonstrate the benefits of paired energy storage and electric vehicle charging stations, but the avoidance of rising demand charges is of particular relevance to New York. A public or workplace charging station may see multiple cars charging at the same time, increasing peak energy usage and, in turn, increasing demand charges. On-site batteries can reduce up-front project costs by limiting distribution upgrades required for interconnection and enabling site-owners to dramatically reduce their demand charges through local charge optimization.

Furthermore, the collocation of batteries and EV charging equipment enables charging stations to participate in demand response programs without sacrificing driver satisfaction. Stationary energy storage allows operators to call on charging stations during DR events regardless of the charging/plug-in status of EVs, expanding their ability to reliably contribute to peak shaving/load-shifting objectives. Should the Commission allow for the incentivization of storage-focused infrastructure upgrades, it should consider requiring the beneficiaries of such investments to enroll in load management programs to guarantee the realization of their full value to the grid.

In response to Staff's request for further use cases illustrating the benefits of collocated charging equipment and storage, EnergyHub points to work completed by the California Energy Commission's Energy Research and Development Division to demonstrate solutions for smart charging, V2X, and a variety of other grid services. The report, *Demonstrating Plug-In Electric Vehicles Smart Charging and Storage Supporting the Grid*, can serve as a useful reference as Staff continues to explore the benefits of the deployment of such infrastructure.[3]

III. Foster collaboration

a. Vehicle to grid integration and residential Make-Ready

The Commission should make space for stakeholder consideration of a V2X future in New York, and leverage the opportunities that a residential Make-Ready pilot presents to inform this discussion.

[3] California Energy Commission Energy Research and Development Division, *Demonstrating Plug-In Electric Vehicles Smart Charging and Storage Supporting the Grid,* August 2018, at: https://www.energy.ca.gov/sites/default/files/2021-06/CEC-500-2018-020.pdf

In their contemplation of both future use cases for V2X frameworks and residential extensions of the Make-Ready program, Staff acknowledges a number of potential benefits and outlines intermediate actions that precede the initiation of either pilot. EnergyHub understands that, per Staff's comments in the Midpoint Review Whitepaper, the current discrepancy between EV demand and inventory may minimize the value of a residential pilot in the near term. EnergyHub additionally understands that the subsidization of residential EVSE infrastructure for a market segment that is independently shouldering the costs associated with early L2 charger adoption may not directly align with the objectives of the Make-Ready program. Regarding V2X pilots, EnergyHub is pleased with Staff's efforts to ensure that VDER tariffs clearly define V2X as eligible for compensation, and more generally with Staff's continued interest in exploring potential barriers to V2X programs in the state.

To ensure the appropriate compensation of benefits associated with V2X, including the ability of EVs to discharge energy onto the grid in response to economic/grid balancing signals., Staff should direct stakeholders to determine how a residential V2X Make-Ready pilot may inform the development of a clear pathway to a V2X future. A V2X pilot targeting the residential sector is a crucial step toward establishing cost-effective charge management strategies and equitable rate structures as the EV/SE market evolves.

In directing the JU's initiation of passive managed charging programs, the Commission has already made important strides in facilitating the expansion of V2X in the state. It is critical that the Commission build on this momentum to more fully explore the benefits and system impacts of bidirectional charging and associated intelligent, automated managed charging services. EnergyHub supports the recommendations made by stakeholders in anticipation of the Midpoint Review and agrees that future VGI pilots should focus on the residential sector, including multi-unit dwellings and single-family housing. By combining residential Make-Ready incentives with V2X pilots, investment in residential infrastructure upgrades will serve a number of purposes that outweigh the risks associated with market prematurity and equity, and will additionally contribute to the Commission's understanding of how V2X can be incorporated into the VDER framework. EnergyHub's experience as a DERMS provider has resulted in a deep understanding of the different kinds of value that various EV programs provide, and how such programs can be stacked to unlock

benefits within the context of the VDER tariff and beyond. We look forward to engaging with stakeholders in discussion of these topics moving forward.

IV. Leverage software solutions

a. Data reporting requirements

The Commission should solve for challenges associated with data collection and reporting by leveraging a software platform capable of supporting a diverse set of EV OEM/EVSE providers.

EnergyHub understands the JU's difficulties with meeting Make-Ready reporting requirements as laid out in the initial order, and we are hopeful that our deep experience with EV program administration (from Make-Ready to managed charging) can inform future stakeholder discussion of these program designs. EnergyHub has first-hand experience in navigating the complexity of integrating with a broad ecosystem of EV OEM and EVSE providers to empower utilities with critical data and situational awareness. Each device provider has unique technical capabilities, meaning that a flexible software platform is required to enable monitoring and reporting across a diverse array of hardware. As highlighted in the Midpoint Review Whitepaper, the variability in charging network capabilities is only increasing as new companies enter the market and customer use cases become more sophisticated.

Staff additionally acknowledges in the Whitepaper the difficulty associated with accessing energy usage data that may be commingled with non-EV load at a given site. A centralized software platform can provide utilities with uniform data and visibility into charging behavior while laying the foundation for new, technology agnostic, equitable, and scalable EV programs. Moving forward, the revised reporting requirements and associated timelines should account for and embrace this complexity upfront, with the understanding that different EV/EVSE providers have different data collection and communications capabilities. Such flexibility, when paired with the use of an appropriate software solution, will allow the state to meet its equity objectives and avoid the exclusion of specific technologies.

It is also important to note here that revisions to data collection and reporting requirements must go hand-in-hand with the adoption of communications standard(s), as different communications standards enable different data collection use cases. Underscoring the need for a careful review of these parameters, excessive reporting requirements can dramatically slow down program implementation

timelines and create undue financial and administrative burden. As illustrated by EnergyHub's experience as a DERMS provider, the importance of limiting collected fields to those that are actionable, informative, and pertinent to program goals is central to the elimination of costly redundancies and barriers to participation. Stakeholders involved in the revision of these reporting requirements must balance the complexity of the current EV/EVSE landscape with the need for visibility into system impact, customer behavior, adoption patterns across customer classes/geographic regions, future use cases, and the reality that equitable transportation electrification necessitates the inclusion of diverse technology solutions.

Stakeholders and Staff should keep in mind the aggressive EV penetration forecasts highlighted in the Whitepaper and align data collection and reporting requirements with use cases that minimize negative impacts resulting from unmanaged EV load growth. Implicated parties should also recall that the value of EV data exists beyond what is needed for infrastructure deployment purposes, and utilizing a software platform capable of collecting, analyzing, and reporting on EV data to realize this value will save money, time, and administrative burden.

V. Conclusion

In closing, EnergyHub once again expresses its appreciation of the opportunity to weigh in on this landmark program. New York has led the nation in its transportation electrification efforts and should apply learnings from this first phase of the Make-Ready program to any revisions moving forward. We look forward to working alongside other stakeholders to inform program designs moving forward.

Sincerely,

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