



February 7, 2024

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**Re: bp pulse Response to PURA's October 11, 2023 Notice of Request for Written Comments in Docket No. 21-09-17 Investigation into Medium and Heavy-Duty Electric Vehicle Charging**

**I. Introduction**

bp pulse appreciates the opportunity to provide written comments to the Connecticut Public Utilities Regulatory Authority (PURA) in response to the electric distribution companies' (EDCs) proposed medium- and heavy-duty (MHD) electric vehicle (EV) incentive programs and rate design filed under this docket on January 10, 2024<sup>1</sup>. Our comments below focus on PURA's objectives stated in the October 11, 2023 Procedural Order<sup>2</sup>:

- Develop MHD ZEV electrification offerings that support the state's statutory requirements and the commitment to the MHD ZEV MOU, prioritizing use cases where available funding and regulatory mandates aim to accelerate adoption
- Establish rate structure(s) and reporting metrics that facilitate the integration of existing, evolving, and emerging MHD ZEV-related technologies that encourage efficient grid utilization and flexibility, and balance ratepayer costs

bp pulse offers comprehensive electric vehicle charging and energy management services to fleets of all types, including those PURA prioritized in this proceeding – transit bus, school bus, and last mile delivery trucks. Our proprietary charge management system, OMEGA™ CMS provides cost effective and service-focused solutions to reducing fuel costs percent and simplifying electrification for organizations of all size. We design, build, and operate EV charging for many MHD fleets across the country.

<sup>1</sup> Eversource and United Illuminating. CT PURA Docket No. 21-09-17. Medium- and Heavy-Duty Electric Vehicle Program Response to Procedural Order. January 10, 2024. (EDC filing).

<sup>2</sup> Connecticut Public Utilities Regulatory Authority. Docket No. 21-09-17. Procedural Order and Request for Associated Draft Tariffs. October 11, 2023.



## II. Summary of Comments

- The EDC's proposed alternative rate design Scenario 1 mitigates demand charges and encourages off-peak charging of MHD vehicles.
- The EDCs recommended MHD make-ready programs will encourage investment in **all fixed infrastructure costs – both utility- and customer-side**, but should extend full incentive eligibility to **both public and private sector fleets** and incorporate expedited utility interconnection and energization processes.
- The EDC's proposed Load Management Technology Implementation Program (LMTIP) will encourage fleet managed charging, and EDCs should enable use of load management technologies to mitigate need for costly time-consuming capacity upgrades.
- EDC MHD fleet advisory services should include information and analysis of the value of third-party load management options.

## III. bp pulse Comments

### a. The EDC's proposed alternative rate design Scenario 1 mitigates demand charges and encourages off-peak charging of MHD vehicles.

Electricity costs remain a barrier to investment in EV charging for several end use cases – most notably public charging and public or private large-scale charging e.g., MHD fleet depots. Demand charges are an impediment to customers with high demand peak relative to the energy throughput. Several utility regulatory commissions have approved alternative rate designs for commercial EV charging to improve the business case for EV charging and encourage investment in infrastructure until EV adoption increases to sustain charging operators.<sup>3</sup>

The EDC's investigate three alternative rate design options to mitigate cost impact of traditional demand charges on MHD EV charging. The near-term recommendation – dubbed Scenario 1 – is based on PURA-approved LDV charging tariffs.<sup>4</sup> The proposal features mixed volumetric- and demand-based charges for electric distribution and transmission services on a “sliding scale” that includes a higher proportion of volumetric-based customer costs when customer load factor is low.<sup>5</sup> This proposed tariff mitigates the demand charge cost barrier for low utilization commercial charging stations such as publicly available hubs serving fleets without depot access or individual commercial vehicles.

This proposed design likely maintains demand charges for private fleet depots since most depots require high power demand and are characterized by relatively high utilization i.e., customer load factor.<sup>6</sup> It is our experience that these customers can manage charging demand to lower peak use and energy costs. Fleets can use load management technologies including automated load

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<sup>3</sup> *Rate Structure Strategy and Policy Action*. CALSTART presentation at CT PURA Docket 21-09-17 Technical Meeting. June 7, 2022.

<sup>4</sup> PURA Dockets 21-08-06 / 22-08-06.

<sup>5</sup> “Load factor is determined monthly, by dividing monthly kWh consumption by maximum monthly demand and by number of hours in the billing period.” EDC filing, pg. 8.

<sup>6</sup> Fitzgerald, Garrett, and Chris Nelder. *DCFC Rate Design Study*. Rocky Mountain Institute, 2019.



management (ALM) to mitigate peak demand impact.<sup>7</sup> Energy needs can be estimated based on duty cycle route planning, and other factors, and charging can be shifted off from utility peak periods. These characteristics hold for our school bus, last-mile delivery, and transit bus customers.

In fact, utility demand charges provide these customers the price signals to encourage efficient use of and investment in the electric grid. They will benefit from the EDC's proposed time-of-use (TOU) billing elements. The proposed off-peak charging rates create value for charging that also reduces system coincident peak to avoid infrastructure investment. This benefits all ratepayers.

**b. The EDCs recommended MHD make-ready programs will encourage investment in all fixed infrastructure costs – both utility- and customer-side, but should extend full incentive eligibility to both public and private sector fleets and incorporate expedited utility interconnection and energization processes**

The EDC MHD make-ready programs should be designed to attract participants, capture lessons learned, and flex eligibility, incentive levels, and program budgets to meet market needs. This is new ground for the EDCs and many of the MHD fleet customers exploring electrification. They will learn much from each other in the beginning of the program.

The programs should offer comprehensive infrastructure incentives to attract participant investment in charging infrastructure. This should include customer responsibility for utility infrastructure costs (e.g., Contribution in Aid of Construction) and fixed infrastructure on the customer premises. Incentives should cover planning, engineering, equipment, and construction costs. For example:

- Electrical equipment such as on-site power transformers, switchgear, electric distribution panel(s), conduit and cable, wiring
- Site demolition, excavation, and restoration
- Site design, engineering and construction

The EDCs note that “a utility side incentive program is not expected to remove the upfront cost barrier to invest in MHD EV charging infrastructure and removes any ability for fleets to ensure economic viability and therefore may not enable MHD EV adoption.”<sup>8</sup> bp pulse agrees with this and the EDC example of New York, where the state Public Service Commission recently acknowledged stakeholder feedback by expanding their MHD EV Make-Ready Pilot incentive eligibility from utility-side infrastructure to utility- and customer-side infrastructure incentives, due in large part to low enrollment.<sup>9</sup>

bp pulse also recommends that EDC programs offer full program incentive eligibility to both public and private sector fleets. Again, MHD electrification is only beginning in Connecticut; the EDCs

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<sup>7</sup> Automated Load Management includes energy management systems deployed to reduce a location's aggregate EV charging load with the objective of reducing or eliminating the need for electrical capacity upgrades on the utility and/or customer side of the meter.

<sup>8</sup> EDC filing pg. 18

<sup>9</sup> New York State Public Service Commission. Case 18-E-0138. Order Approving Midpoint Review Whitepaper's Recommendations with Modifications. November 16, 2023.



note their lack of experience with MHD EV charging customers and the “nascent market” environment. Yet the EDC’s propose up to 100 percent incentive for public sector fleets and only up to 50 percent incentive for private incentive. Private fleets should be offered the same incentive level to encourage their participation. Also, private fleets often operate for public good – for example, school bus contractors.

In addition to capital incentives, EDCs should enhance planning, engineering and construction of utility infrastructure to keep pace with customer timelines. Site energization can significantly lengthen a project timeline, especially for larger installations and sites with insufficient electrical capacity. Standardizing energization processes and timelines wherever possible accelerates implementation of EV charging stations. For example, the California Public Utilities Commission (CPUC) requires Investor-Owned Utilities to energize an EV charging project requesting 2 MW or less an average of no more than 125 business days from a customer’s request for service.<sup>10</sup> CPUC staff published a Transportation Electrification Framework including the following recommendations to help improve transparency of utility energization processes:<sup>11</sup>

- Utilities should quickly analyze the available power on a connection or nearby transformer to understand what type and size of project can be built without major upgrades.
- Utilities should provide information regarding power availability early in the service request process (e.g., before detailed site plans are completed) to enable station developers to explore possible sites, and when appropriate, adapt site sizing and layouts that minimize utility costs.
- Utilities should leverage Integration Capacity Assessment Maps to provide third parties with more accurate, timely information about existing distribution system capacity.
- Utilities should create a process for fleets to share with them plans for infrastructure and electrification, including their geographical location or service routes.
- Utilities should streamline their current process for determining existing system capacity at proposed EVSE sites and whether a new EVSE installation will trigger the need for upgrades.
- Utilities should create additional distribution system planning efforts necessary to better track EVSE installations and their impact on the distribution system.

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<sup>10</sup> Public Utilities Commission of the State of New York – Energy Division. Resolution E-5247. Dec. 15, 2022.

<sup>11</sup> Section 8.3 of the CPUC Transportation Electrification Framework (TEF), *Electric Vehicle Supply Equipment Interconnection*. <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M326/K281/326281940.PDF>



- c. The EDC’s proposed Load Management Technology Implementation Program (LMTIP) will encourage fleet managed charging, and EDCs should enable use of load management technologies to mitigate need for costly time-consuming capacity upgrades.**

Incentives for load management encourage efficient use of the grid and save MHD customers on their utility bills by enabling a shift to off-peak billing periods. bp pulse uses automated load management (ALM) technology, sometimes integrated with distributed energy resources, to optimize customer charging costs and ensure vehicle availability. In practice, ALM shifts risks from fleet operators to service providers with experience using technology to manage charging. Fleet operators plug in vehicles on their schedule and let software ensure that the vehicle is charged and ready for its next shift.

Load management technology can also enable customers to avoid costly and time-consuming electrical infrastructure on the utility- and customer-side of the meter. ALM maintains charging to a demand set point. This enables flexible interconnection options e.g., enabling EV charging to fit customer needs despite a service capacity constraint, avoiding or deferring utility service upgrades. The upshot is EV charging installation on a faster timeline. This also avoids infrastructure investment to the benefit of all ratepayers. EDCs should investigate how to integrate ALM and load management technology into service engineering and distribution planning and so enable EV load management to provide these ratepayer benefits.

- d. EDC MHD fleet advisory services should include information and analysis of the value of third-party load management options.**

EDC advisory programs are an opportunity to provide MHD customers with advanced planning options needed to optimize their electrification experience. The EDCs proposed advisory program scope appears to include introductory services such as site assessments, vehicle and charging infrastructure recommendations, total cost of ownership analysis, etc.<sup>12</sup> They recommend “additional program components...[such as]...analysis of peak demand mitigation solutions” in future iterations of the program.<sup>13</sup>

Peak demand mitigation, load management technologies, and managed charging options should be included in the initial MHD fleet advisory programs. It is critical to build good charging habits in EV drivers – especially in MHD operators expected to require high power charging with potential for high peak demand. Optimizing charging profiles is critical to avoiding excess infrastructure investment that will raise ratepayer costs. EDC fleet advisory administrators can work with bp pulse or a number of other innovative third-party service providers for insight into the potential for load management to affect EV charging peaks.

Advisory programs should be available to different types of MHD. While we generally agree with PURA’s focus on last-mile delivery trucks, there are several MHD vehicle types that can be electrified across stages of delivery logistics. Trucks that support drayage operations (class 6-8),

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<sup>12</sup> EDC filing pg. 31 appear to refer to Fleet Advisory Services components on Procedural Order pg 25.

<sup>13</sup> EDC filing Pg. 33.



return-to-base local hauling (Class 6-8), and regional haul (Class 7-8) are all use cases that Connecticut should consider in utility electrification programs.

#### IV. Conclusion

Thank you again for this opportunity to comment on this Docket. bp pulse commends Connecticut for leadership in this matter and appreciates its thoughtful consideration of our recommendations.

Sincerely,

*/s/Brian Ross*

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