October 5th, 2021

Aida Camacho-Welch
Secretary of the Board
Board of Public Utilities
Post Office Box 350
Trenton, NJ 08625-0350

VIA EMAIL SUBMISSION

RE: Docket No. QO21060946 - In the Matter of Medium and Heavy Duty Electric Vehicle Charging Ecosystem

Dear Ms. Camacho-Welch:

CALSTART and our Coalition for Commercial Electric Vehicles (CCEV) are pleased to offer our comments in response to New Jersey's Electric Vehicle Infrastructure Ecosystem 2021 – Medium and Heavy Duty Straw Proposal.[1] CALSTART and CCEV applaud the Board of Public Utilities (BPU) for advancing a framework for furthering electric vehicle (EV) adoption in New Jersey and appreciates the opportunity to participate in this ambitious and timely effort as the State embarks on a holistic process to facilitate rapid transportation decarbonization through electrification of the medium and heavy duty vehicle sector.

With last year's release of the comprehensive Energy Master Plan (EMP) and the recent passage of landmark legislation to boost EV adoption, New Jersey now has among the strongest frameworks to tackle climate change of any state in the nation—and because transportation is the single most greenhouse gas-intensive sector in New Jersey, comprising 42% of the State's emissions in 2018,[2] strategies to mitigate emissions attributable to that sector must be a major part of that overall policy mandate. Medium- and heavy-duty vehicles (MHDVs) present immense opportunity for transformation, as a small share of on-road vehicles contribute an outsize pollution burden. In particular, heavy-duty vehicles constitute just 4% of on-road vehicles in industrialized countries yet consume 36% of on-road fuel and are responsible for 73% of NOx emissions from on-road vehicles in those countries.[3] Electrifying MHDVs therefore not only offers promise to reach New Jersey's greenhouse gas emissions reduction targets, but is even more imperative to improving health and quality of life in overburdened communities.

[1] New Jersey Board of Public Utilities. New Jersey Infrastructure Ecosystem 2021 – Medium and Heavy Duty Straw Proposal. Released June 30, 2021. https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1243671
[2] State of New Jersey Department of Environmental Protection. 2018 Statewide Greenhouse Gas Emissions Inventory. Released October 2018. https://w ww.nj.gov/dep/aqes/pdf/GHG%20Inventory%20Update%20Report%202018_Final.pdf
[3] CALSTART and FIER Automotive & Mobility. "Moving Zero-Emission Freight Toward Commercialization," October 2020. https://globaldrivetozero.org/site/wp-content/uploads/2020/12/Moving-Zero-Emission-Freight-Toward-Commercialization.pdf

New Jersey has taken an important step forward through the BPU's proposal of make-ready infrastructure financing, fleet planning services and utility rate structure reform. To meet the state's ZEV, climate, and air quality goals, efficient and effective utility and ratepayer investments to support fleet electrification will be critical, because without utility support for infrastructure, the total-cost-of-ownership (TCO) of MHD-EVs will be unknowable, and potentially unfavorable. If the TCO of EVs is not favorable for fleets in the near term, they will be unwilling and/or unable to make the switch to electric vehicles. Thus, in furtherance of New Jersey's leadership on transportation and freight decarbonization, these comments provide seven main recommendations:

1. Expand make-ready infrastructure financing to depot charging for all MHDV fleets to ensure that MHD-ZEVs have favorable total-costs-of-ownership (TCO);
2. Develop utility rate reforms via EV specific rates designed to ensure that the cost of charging with electricity is cost-competitive with diesel fueling;
3. Expand the proposal to include customer-side make-ready support for all fleet types, and consider Electric Vehicle Supply Equipment (EVSE) incentives;
4. Expand the vehicle classes supported by this policy to be fully inclusive of the Medium-Duty segment;
5. Strengthen public charging station deployment through planning and grid impact studies, while making capacity/hosting maps available to potential developers;
6. Strengthen inter-agency coordination and transparency to speed up ZEV adoption;
7. Address best practices for utilities' fleet advisory services.

I. Background

CALSTART is a national not-for-profit clean transportation technology consortium, with more than 280 members all dedicated to the growth of the clean transportation industry. CALSTART works with the public and private sectors to drive innovation in the clean transportation sector, and its membership is comprised of vehicle manufacturers, parts and components suppliers, EV charging station providers, transit agencies, low carbon fuel producers, electric and gas utilities, and more. CALSTART has offices located in California, Colorado, Michigan, and New York.

CALSTART is a recognized authority with respect to workplace electric vehicle (EV) charging programs and the commercialization of zero- and near-zero-emission technologies for MHDVs. CALSTART has engaged in utility proceedings in Michigan, New York, Maryland, California and many other states. CALSTART has maintained a Northeast regional office in Brooklyn, NY since 2013, and is currently implementing a *Drive to Zero: Northeast* campaign to accelerate markets in the Northeastern United States for zero-emission commercial vehicle technology through a harmonized regional recipe of vehicle incentives, regulations, supportive policies, and infrastructure preparedness. CALSTART has also worked closely with the New

York State Energy Research and Development Authority (NYSERDA) to design and administer incentive- and outreach-based programs to accelerate clean vehicle adoption; including the New York Truck Voucher Incentive Program (NYTVIP),[4] and Charge to Work NY.[5] CALSTART has established itself as a trusted broker in the Northeast between government agencies and the clean transportation industry, including through its leadership role in the Northeast Diesel Collaborative convened by United States Environmental Protection Agency Regions 1 and 2 and the air agencies of states in those regions.[6]

CALSTART's Coalition for Commercial Electric Vehicles "CCEV" includes the following commercial vehicle and commercial electric vehicle charging providers: Arrival, Daimler, EAVX, EVgo, Greenlots, Lion Electric, Nikola, and Volvo Group. The Coalition is joined on these comments by CALSTART members ChargePoint, Rivian and Tesla. The goal of CCEV is to collectively advance utility programs that support fleet electrification and affordable commercial charging solutions. CCEV has engaged in proceedings in New York, North Carolina, and Massachusetts, with the goal of ensuring that utility programs support the growth of commercial electric vehicles through thoughtful program and rate design and adoption of best practices for fleet solutions. Our coalition is confident that the role of the utility is paramount for fleet adoption of electric vehicles. If CCEV members have differing perspectives on the Straw Proposal, these will be addressed in their separately filed comments.

CCEV identified New Jersey as a key market where we expect to see rapid adoption of commercial electric vehicles, given the state's commitments to transportation electrification. New Jersey is also an important market for CCEV member companies, and where they expect to sell many MHD-ZEVs in the future and/or install many MHDV chargers, generating tens of thousands of jobs in EV infrastructure and services. However, the pace and scale of adoption of MHD-ZEVs depends in part upon the necessary policy and regulatory frameworks being implemented to support New Jersey's goals. For these reasons, we find that New Jersey's leadership of the region is absolutely critical. BPU staff has produced the first stand-alone statewide EV roadmap document specific to the MHDV sector in the Northeast, and therefore, we are taking this opportunity to weigh in on this critical document. CCEV is appreciative of BPU staff's hard work leading up to this Straw Proposal and consideration of the unique needs of commercial EVs.

Simply put, MHD-EVs cannot be driven if they cannot be charged. New Jersey needs a plan to interconnect chargers to serve all the vehicles predicted to be purchased under the timelines currently considered in the Advanced Clean Trucks (ACT) rule. Initial modeling estimates show that more than 200,000 depot chargers and more than 3,000 public fast chargers will be needed by 2050 to support the target levels of zero-emission MHDV adoption under the ACT rule, which is based upon the rule adopted by California's Air Resources Board. California spent many years growing dedicated MHDV incentive programs and securing the guaranteed

[4] https://nyserda.ny.gov/truck-voucher-program/
[5] https://www.chargetoworkny.com/
[6] See CALSTART presentations listed on the Northeast Diesel Collaborative website: https://northeastdiesel.org/

utility infrastructure investments and rate structures to support zero-emission vehicles, before its regulatory body considered a zero-emission sales mandate. New Jersey will need to adopt similarly supportive utility policies on an equivalent timeline. New Jersey's agencies must develop a joint plan to provide much of the infrastructure that will be needed, particularly during early compliance years, and cannot shift the costs of this infrastructure to fleets without revising its ACT analysis. This Straw Proposal is an important first step to supporting the electrification of MHDVs, and we offer the following suggestions to strengthen the effectiveness of this critical document.

II. Recommendations

1) Expand make-ready infrastructure financing to depot charging for all MHDV fleets to ensure that MHD-ZEVs have favorable total-costs-of-ownership (TCO).

CCEV urges the BPU to reconsider the scope of the make-ready policies in the Straw Proposal, which at present only provide meaningful support to public fleets. We appreciate seeing the BPU Straw Proposal recognize the importance of public fleet electrification, and therefore we strongly support the proposal's provision for utilities to provide up to 100% Make-Ready incentives for public fleet infrastructure and publicly accessible MHD charging sites. "EDCs may provide up to 100% incentives for Make-Ready for charging infrastructure for public fleets, prioritizing those fleets serving urban and Overburdened Communities." The Straw Proposal includes the following definition of Make-Ready:

> "Make-Ready" means the pre-wiring of electrical infrastructure at a parking space, or set of parking spaces, to facilitate easy and cost-efficient future installation of Electric Vehicle Service Equipment, including, but not limited to, Level Two EVSE and DC Fast Chargers. Make-Ready includes expenses related to service panels, junction boxes, conduit, wiring, etc., necessary to make a particular location able to accommodate Electric Vehicle Service Equipment on a "plug and play" basis. "Make-Ready" is synonymous with the term "Charger Ready".

This definition of make-ready interestingly leaves out any necessary infrastructure on the utility side of the meter, which CCEV finds quite confusing, and rather it focuses only on infrastructure on the customer-side of the meter. The Straw Proposal makes no mention of the utilities' existing line extension policies nor does it propose to modify those policies specifically, which makes it difficult to interpret. Our understanding of the existing line extension policies for the largest IOUs in the state is that fleet customers with depot charging may be required to make a deposit or contribution to a line extension to handle increased load. Existing policies make no mention of electric vehicle customers, although they reference solar and storage customer interconnection. We understand that customers with depot charging may be required to make a deposit or contribution to a line extension to handle increased load, but it seems excessively complicated for a fleet to try and make those estimations using the existing methods for calculating customer costs.

Furthermore, it is unclear whether the customer will be charged for infrastructure upgrades related to the primary service, such as potentially necessary upstream transformer upgrades. All elements of the existing line extension policies seem fraught with unknowns and need to be clarified, but most especially, the fact that the utility is the one developing the estimate of deposit, fleets really have no way to verify or negotiate costs. As discussed below, fleets cannot plan for costs they do not control and which are impossible to ascertain in advance.

Taken as a whole, we interpret the Straw Proposal to exclude any infrastructure support for private fleets' electrification needs at their facilities. The Straw Proposal only seems to envision technical assistance for private fleets to install chargers at their facilities, and so they would be subject to utilities' existing line-extension and distribution system upgrade cost formulas, which are likely to lead to extremely burdensome expenses on the utility side of the meter. (We will discuss the issue of customer-side make-ready later in our comments).

The Straw Proposal's focus on public charging as the only appropriate location for public/ratepayer supported infrastructure that could serve private fleets seems well intentioned but misinformed. While publicly available charging will be necessary for some private fleet applications (such as long haul and regional haul heavy-duty trucks), publicly available charging is in *no way a substitute for depot charging of MHD-EVs* and the Straw Proposal needs to ensure all charging options are supported. Depot charging and other dedicated hubs for private fleets will play an important role in enabling fleet electrification.

In deciding whether to electrify, fleets are primarily looking at the "total-cost-of-ownership" (TCO) for an EV. The total-cost-of-ownership includes not only the initial purchase price, but also the costs of infrastructure, fuel and maintenance over the expected life of the vehicle. So, to have a favorable TCO, an EV needs to be able to compensate for the higher initial purchase price, and cost of charging infrastructure, through fuel and maintenance savings over time.

CALSTART's "Beachhead" strategy, adopted by California's Air Resources Board[7], demonstrates that TCO is better for certain vehicle categories today, and also demonstrates the critical nature of depot charging to MHD-ZEV adoption. The beachhead strategy is based on ZEV adoption occurring in waves, favoring as first moving vehicle types where technology readiness, favorable TCO, fleet needs and supportive policies align.[8] First mover (or early 'beachhead') applications for ZEV technology typically operate with a return-to-base model, driving fixed daily routes Some examples of these early applications include transit buses and urban delivery vehicles (vans and box trucks). Vehicles like regional haul heavy-duty trucks are part of successive beachheads, yet are coming to market now. Charging needs for early beachheads are primarily satisfied by depot charging, rather than publicly available charging. It is notable that the ACT regulation, which New Jersey is now considering, the California Air Resources Board (CARB) analysis of regulatory feasibility calculated the TCO of various

[7] "Long Term Heavy Duty Investment Strategy Fiscal Year 2020-21 Three Year Recommendations", California Air Resources Board, https://ww2.arb.ca.gov/sites/default/files/2020-11/appd_hd_invest_strat.pdf

[8] https://globaldrivetozero.org/public/The_Beachhead_Model.pdf

MHDV types, but, the costs make-ready was *not* included, while the cost of chargers (EVSE) was included. Therefore, if New Jersey's BPU departs from California's precedent regarding utility support for MHD-EV make-ready, this is a material change for New Jersey's consideration of the ACT as well.

CCEV advocates for make-ready policies across the country, finding that owning, operating, and upgrading the grid is the utilities' primary function—since utilities will necessarily perform the work, and own the "finished product", most leading states have determined that the utility should also pay for the necessary upgrades to provide service to its customers. Utility-side make-ready should not require private dollars to be upgraded, as providing power to customers is the primary responsibility of electric utilities.

Furthermore, commercial fleets and charging developers cannot make decisions without concrete information regarding the full costs they will be expected to bear. Fleets will be hesitant to electrify if they are expected to shoulder unknown or unknowable, extremely burdensome, or uncertain costs over which they have no control. It is our position that utilities should cover utility-side of the meter costs, in part because this is an element of universal service and in part because the distribution grid is utility-owned infrastructure, it is not owned by the customer so the "upgrade" will also not be owned by the customer. If one customer leaves, another customer can make use of the upgraded infrastructure. Furthermore, the utility and other customers will also benefit from these upgrades. Finally, there is precedent from across the country for covering 100% of utility-side upgrades and rate-basing these investments [9] New York's Medium- and Heavy-Duty EV Make-Ready pilot provides up to 90% of utility-side infrastructure costs for both public and private fleets, in addition to fleet assessment services.[10]

As discussed further later in these comments, CCEV is very supportive of utilities providing planning support to private (and public) fleets and other forms of technical assistance indicated in the Straw Proposal. This will certainly be very helpful, as it is also the appropriate role of the utilities to help fleets plan for their charging needs, to help guide them toward locations where charging may be installed at a lower cost and more quickly, and also to plan out the growth of their electric fleet, to lessen the risk of "throw away" infrastructure down the line. We will discuss this concept further in later comments.

However, planning and technical assistance can only bring fleets to the point of understanding the value proposition and how EVs will operate as part of their fleets. Make-ready support is absolutely necessary for fleets to factor into their planning and modeling to see a positive total-cost-of-ownership sufficiently quickly to justify a fleet transition. The utility programs included in the straw proposal will fall short of supporting New Jersey's ambitious air quality and ZEV goals, and will not support the achievement of the Advanced Clean Trucks

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[9] *See* California Public Utilities Commission decisions 18-05-040; Massachusetts D.P.U. 17-13 approval of National Grid's Electric Vehicle Market Development program, Sept 10, 2018.

[10] NY EV Make-Ready Pilot Program summary: https://jointutilitiesofny.org/ev/make-ready/mhd-pilot-program ; LD Make-Ready Program Participant Guide: https://www.oru.com/-/media/files/oru/documents/energy-future/ev-make-ready-program/participant-guide.pdf?la=en. Utility make-ready spending for fleets in this pilot is capped at $15 million.

standard, if private fleets are excluded from this proposal and required to pay for utility distribution grid upgrades and other utility-side make-ready costs.

Make-Ready Contingent Upon Performance Requirements

The Straw Proposal provides that, if a private or public fleet is using an EDC (electric distribution company)-funded Make-Ready site, the EDC would have 12 months to install the make-ready infrastructure and then the EVSE:

> …would be required to accept certain performance requirements. The EVSE Infrastructure Company would be required to:
>
> 1. Commit to installing the EVSE within a period of time from when the Make-Ready is installed (Staff proposes an initial 12-month period, with up to two (2) six (6) month extensions);
>
> 2. Commit to keeping the Make-Ready site Operational;
>
> 3. Commit to utilizing managed charging for a significant portion of its charging;
>
> 4. Commit to returning Make-Ready infrastructure back to the EDC for redeployment in the event that the EVSE Infrastructure Company no longer wishes to maintain EVSE at that location, fails to meet the performance criteria as discussed below, or ceases its commercial operations; and
>
> 5. Commit to network interoperability and data sharing with the EDC in order to ensure proper management of the load and general grid needs due to the high-anticipated draw at a site meant for MHD vehicle charging.

While CCEV supports many of these requirements as generally reasonable, because the proposal would require public fleets to fund make-ready to serve their site, we consider that many of these requirements are, on balance, potentially onerous. If the utility were fully funding the make-ready, fleets might be more willing to accept these requirements. On #1, we wish to raise that EV service provider (EVSP) deployment timelines are highly dependent on utility easement and interconnection processes and timelines, and there may be contractual limitations based on the site host. We recommend that EVSEs and utilities work together on timelines for utilities and the private sector to interconnect projects and get them online.

Specifically regarding #3, of course managed charging is very important to keep fleet's charging costs down and to minimize any potentially negative grid impacts and generally all CCEV members are working to maximize managed charging while meeting fleet's needs. The term "managed charging" is also not a term of art, and can have a wide range of definitions that could be limited to smart-charging, or smart-charging controlled by the utility (more problematic for fleets potentially) or expanded to include distributed energy resources like on-site solar and storage. Therefore, CCEV recommends modifying the Straw Proposal to say that fleets should be provided the opportunity to participate in load management and respond to price signals, and if the utility offers managed charging programs they should be encouraged, but not required. This would better acknowledge that managed charging should ultimately be the goal fleets aim

for, yet it may not be practical immediately for all deployments in all use cases (there is no one-size-fits-all solution today). For example, at present many heavy-duty vehicle applications may need all charging hours when vehicles are parked.[11] In these early stages of MHD-EV deployment, there is a lot we are still learning about the charging patterns and capabilities of so many diverse vehicles and vocations.

Regarding # 4, we are unsure whether this would be reasonable in an instance where a private fleet has fully funded the make-ready. This problem of a fleet paying for infrastructure it then does not own is exactly why we recommend the utilities fund make-ready for all fleet types. Regarding # 5, the utilities will already certainly have access to meter data which should help them understand charging patterns and load, but the Straw Proposal's statement is fairly vague and warrants further discussion regarding BPU and utility objectives for data sharing.

Regarding the 12-month window for the utility to prepare the make-ready, we find that this is generally a reasonable time frame for a fleet site or DC-FC build-out, but note that for a smaller installation (like level-2 only charging), 12 months might actually be an excessive amount of time. The reasonableness of the time-frame seems highly dependent upon the complexity of the site and whether any major utility-side upgrades are needed.

Public Charging Needs

CCEV applauds NJ's initiative to support the deployment of an EVSE network for trucks because this will enable the charging ecosystem needed for more advanced heavy-duty e-truck deployments. Still, most of our members agree this should be a secondary priority for utility investment, with support for depot charging the more imminently needed utility investment, based on the beachhead strategy. A variation of depot charging is shared charging, where multiple private entities share the costs and use of EVSE installation. This may be particularly promising for drayage trucks, an application where ownership is decentralized, capital availability is limited, and operation routes are short. Shared charging at ports (which is sometimes considered private property) or other shared charging applications "behind the fence line" would be another ripe area for utility support and investment.

Key Recommendation

The next five years will be pivotal in determining whether New Jersey will be able to meet the ambitious timetables called for in the MHD ZEV MOU and other policy commitments. Therefore, to encourage the needed EV growth in NJ, the BPU should approve the utilities covering 100% of EVSE-enabling distribution system upgrades for the next 5 years, regardless of the location of the infrastructure or whether it the fleet is a private commercial fleet or a public fleet. Such a policy would be justified based on grid and ratepayer benefits, including but not limited to increased electricity sales and better asset utilization, notwithstanding clean air and societal benefits. Rate-basing utility side make-ready is not only appropriate but should be done to facilitate the success of the Advanced Clean Trucks rulemaking in New Jersey, which will

[11] In the future, higher capacity charging may create more flexibility for HD trucks, for example, but higher capacity chargers also come at a much greater cost to fleets and potentially the grid.

bring immense positive impact to New Jersey's air quality in its historically overburdened communities. This policy would maintain New Jersey's leadership in MHD-EV policy, whereas maintaining the scope of the Straw Proposal's existing recommendations would justify New Jersey's leadership position to a great degree.

2) Develop utility rate reforms via EV specific rates designed to ensure that the cost of charging with electricity is cost-competitive with diesel fueling.

CCEV strongly supports NJ BPU's proposal to reform rate structures and address the barrier posed by demand-charge based rates for MHD-EV adoption. This Straw Proposal "Question 7" requests feedback on the best way to achieve demand charge reductions. (p. 16); and "Question 8" also seeks input on use-based rates for various sectors of MHD charging (p. 16). We will address both of these questions here.

A successful EV adoption strategy must enable DC fast charging to meet the diverse needs of public and private commercial fleets (including transit providers). While many EV duty cycles allow for longer charging sessions for which Level-2 charging may be adequate, higher-powered DCFC charging is critical for meeting the needs of growing medium- and heavy-duty deployments where battery size, and daily mileage and charging vs. drive time, necessitate the use of fast charging.

Traditional electricity rates were not designed with electric vehicles or high-powered DCFC in mind. Demand charges represent a particularly significant barrier to public DCFC deployment in most cases—just one DCFC session can trigger high peak demand for site hosts and account for 90% of an operator's electricity bill. Public DCFC is a particularly challenging use case because charging owners are limited in the degree of price signal they can send to customers. Demand charges can be equally problematic for fleets beginning to grow their electric fleets with depot charging. As such, we recommend that current rate structures *should not be taken as the starting point for the development of new rate structures.* CALSTART recommends that NJ BPU takes into consideration alternative rate reforms developed by other utilities, and promote the design of rate structures that focus on the needs of electric fleets.[12] Notably, many other states have either adopted policies of demand-based alternatives, or have mandated that utilities develop alternative rate designs, so New Jersey does not need to start from scratch in determining potential rate designs.

States around the country have introduced and approved EV rates that are designed to reflect the cost of service without penalizing site hosts, and therefore rely more on use-based (volumetric) charges to recover costs. CCEV has supported these policies and we are pleased to see leading utilities acting to provide appropriate demand charge relief. Establishing alternatives to traditional, demand-based electricity rates would significantly add to New Jersey's efforts

[12] Among the utilities that have developed alternative rate designs or demand charge "discount" rates include: Madison Gas and Electric Company (WI), Minnesota Power
Xcel Energy (CO and MN), Pacific Gas & Electric and San Diego Gas & Electric (CA), BG&E & PEPCO (MD), and Pacific Power (WA).

made thus far to support EVs and help ensure equitable, widespread, and sustainable clean transportation across the state.

3) Expand the proposal to include customer-side make-ready support for all fleet types, and consider EVSE incentives.

We recommend that the BPU revise the Straw Proposal to include at least partial customer-side make-ready support to all fleets. While we agree that public fleets have a great need for make-ready assistance, New Jersey will not experience the necessary growth in MHD-EVs without support for all aspects of infrastructure and EVSE costs for all fleets. Utility and public investments in EV infrastructure are justified as they will provide significant public health benefits, and will help to jump-start MHD-EV growth in New Jersey, bringing further public investment and jobs to New Jersey.

The Straw Proposal provides (p. 12-13): "EDCs may provide up to 100% incentives for Make-Ready for charging infrastructure for public fleets, prioritizing those fleets serving urban and Overburdened Communities." We interpret this to mean that all make-ready infrastructure (both on the utility and the customer's side of the meter) for public fleets and publicly accessible chargers is covered by the 100% make-ready incentive referenced in the Straw Proposal, however, this is somewhat unclear. CALSTART recommends that final documentation on the proposal should reflect the scope of incentives both in terms of the specific types of infrastructure covered, as well as the "customer/utility side of the meter" distinction, which is typically used by most industry members.

Customer-side make-ready deployment also warrants utility or publicly funded support, and many states before NJ, including New York, Massachusetts, Michigan and California, have considered this support and found it warranted. Utilities generally will recover these costs through increased revenue from electricity sales, while the public benefits greatly from cleaner air and quieter streets. Recently approved and proposed utility programs in the Northeast take many different forms, but all include make-ready support for EVSE infrastructure. In fact, the BPU recently approved such a program for PSEG.[13]

There are other examples of Northeast utilities proposing and/or regulators approving programs that support customer side make-ready and EVSE. National Grid in Massachusetts recently filed its "Phase 3" clean transportation proposal, which builds on its approved Phase 1 EV program that focused on LD use-cases,[14] and Phase 2 program which added fleet advisory services. National Grid's Phase 3 proposal positions fleet programs prominently and proposes to cover 100% of utility- and customer-side make-ready infrastructure and provide rebates of up to 50% of EVSE cost to support an estimated 850 MHDVs and 1150 LDVs in fleets. National Grid proposes increased EVSE rebates in environmental justice communities (EJCs) of up to 100%

[13] PSEG Clean Energy Future, Electric Vehicle and Energy Storage Program, NJ BPU, EO18101111, approved January 27, 2021.
[14] National Grid, Electric Vehicle Market Development, MA D.P.U. 17-13, Sept. 10, 2018.

for such ports. (Proposed fleet EVSE rebates are capped at $40,000 per port or $80,000 per port in EJC).[15]

Utilities have the expertise necessary to provide infrastructure build-out on the customer's side of the meter as well, and, through their involvement utilities can ensure that infrastructure doesn't become obsolete, or that trenching/ conduit/ wiring doesn't get ripped out a few years down the line when the electric fleet grows from a handful of vehicles to dozens, and the fleet's charging needs change dramatically. As we discuss in more detail below, MHDV electrification underscores the importance of system planning and load forecasting. Utilities, if involved all along, can help fleets plan appropriately for this growth when making early infrastructure investments. This utility involvement can also help inform the utility's planning and forecasting, supporting ways to streamline the interconnection process.

EVSE Incentives are Critical to Encourage MHDV adoption, Various Funding Sources may be Appropriate

Question 3 in the Straw Proposal asks: "what best practices might be applied and what funding sources are most appropriate to fund private fleet programs? (p.13)" CCEV believes it is appropriate for utility ratepayer funds to be used for commercial fleet make-ready and other taxpayer funds for EVSE, as have been spent in many other jurisdictions. Furthermore, NJ has prioritized transportation electrification in its initial allocations of proceeds from its participation in the Regional Greenhouse Gas Initiative (RGGI).[16] While this priority has supported successful electric vehicle incentive programs administered by BPU (for light-duty vehicles) and the Economic Development Authority (NJEDA) (for medium-duty vehicles), RGGI funds could also be an appropriate source for EVSE, as mentioned in the RGGI Strategic Funding Plan. Further funds would be available to New Jersey if it were to join the Transportation and Climate Initiative Program (TCI-P), which could generate revenues, reserved for clean and equitable transportation priorities, on par with California's Greenhouse Gas Reduction Fund. California also has a very minimal fee attached to vehicle registrations which funds EVSE incentives for MHDVs, among other things.[17]

States and utility regulators have taken varying approaches to providing public support to assist with the cost of EVSE. Whether in the form of utility incentives for a proportion of the EVSE cost (leading utilities have covered up to 50% of EVSE costs for private fleets) or public incentives, such as incentives that could be developed by NJEDA, some form of incentive to cover the cost of a charger is very important for MHDVs, where DCFC charging costs can be equivalent to ¼ of the vehicle cost. States have approved various forms of ratepayer incentives or ratepayer financing for EVSE.

We wish to emphasize that MHDV and LDV charging are much more different than they are alike. LDVs predominantly charge at 7kW or below, whereas most MHDV fleets rely on

[15] Commonwealth of Massachusetts Department of Public Utilities D.P.U. 21-91, Direct Pre-Filed Testimony of the Electric Vehicle Program Panel, Filed July 13, 2021
[16] https://www.nj.gov/rggi/docs/rggi-strategic-funding-plan.pdf
[17] https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program

DCFC charging of 100-350kW. Therefore, the customer-side make-ready and EVSE costs for fleets are orders of magnitude higher than the charging needs for most passenger vehicles. Without direct support to bring down the cost of customer-side make-ready (both for public and private fleets), ZEV adoption will take much longer to occur. We urge BPU to re-consider the utility's role in encouraging early adoption of MHD-EVs.

4) Expand the vehicle classes supported by this policy to be fully inclusive of the Medium-Duty segment

CCEV is pleased to see that that BPU staff have expanded its framework recommendations for EV programs from light duty to medium- and heavy- duty commercial vehicles. However, lighter-weight medium-duty vehicles (vehicles that fall into EPA classes 2b through 4, based on weight) are currently out of the scope of the Straw Proposal. CALSTART recommends NJBPU to expand all existing and, we hope, expanded program proposals under this Straw Proposal to all vehicles in weight classes 2b through 8. Doing so will better align with incentive programs run by sibling agencies, including NJ EDA's pilot voucher incentive program (NJZIP), which awards funding for zero-emission class 2b-6 vehicles. [18] Furthermore, NJDEP's rulemaking to adopt California's Advanced Clean Trucks rule covers nearly all vehicles in classes 2b-8.[19] A common scope of vehicle types across NJ agencies, incentive and regulatory programs will avoid dysfunction, ease implementation, allow for increased synergies across agencies' interventions and speed adoption.

Medium-duty vehicles (such as cargo vans, step vans, small box trucks and small school buses) are included in early beachhead applications. Thus, TCO for these vehicles is generally expected to be more favorable in early years of adoption, and the drive cycles of these primarily urban vehicles lend themselves very well to battery electric drive trains. Still, make-ready support will be critical to speed up adoption, particularly for fleets relying on DCFC rather than Level 2 charging.

CCEV posits that perhaps BPU staff may presume that these MDVs will charge at level 2 so will need less make-ready utility support. While this may be the case for some vehicle vocations, for others, the demanding drive cycles may require DCFC. It is really too early to say as there are not enough vehicles on the road to understand charging needs and anticipate vehicle use patterns with certainty.

We do also wish to note that there is some "crossover" between traditional vehicle classes for BEVs, where a vehicle that might otherwise be an LDV weighs over 8500 lbs due to battery size, and so will be categorized by most state agency definitions as an MDV.

[18] https://www.njeda.com/njzip/
[19] https://www.nj.gov/dep/rules/notices/20210419a.html

5) Strengthen public charging station deployment through planning studies and grid impact studies, while making capacity/ hosting maps available to potential developers.

To facilitate public charging development, it is important for New Jersey's agencies to work with utilities to produce three unique types of studies and information: 1) a statewide assessment of the best locations for public truck charging, 2) grid capacity/ "hosting" maps that show where excess grid capacity is available for charging hubs and 3) overall grid impact studies of MHDV charging (public and depot-based) that will help the BPU plan for necessary additional capacity to serve EV loads. It would likely be most effective if the public charging assessment and the grid impact studies are done on a statewide basis and made publicly available, whereas "hosting" maps should be made available to fleets upon request, or when utilities are working with fleets to plan for their charging needs.

Today BPU should focus on planning for public charging to support electrification of "later-wave" applications like regional haul and drayage, but this should not distract from the most immediate necessary investments, which should be made in infrastructure to support depot charging for all fleet types. New Jersey could simultaneously identify some prime public truck charging sites in the next year and aim for development of a handful of public truck charging stations as pilot programs in the next 2-3 years. But, CCEV wishes to emphasize that the BPU's near-term focus should be on depot charging.

CCEV agrees with NJ BPU on the need to develop hosting maps that maximize resource efficiency and ensure electricity supply for new charging infrastructure. CCEV also believes that additional grid impact studies may be useful for NJ BPU to plan for additional delivery capacity needed across the state.

Several regional planning studies conducted to date provide a template that New Jersey can build upon to identify strategic placement of public charging for MHD-EVs. For instance, the New York Metropolitan Transportation Council's (NYTMC) ongoing Clean Freight Corridors planning study seeks to identify corridors with sufficient alternative fuel infrastructure to warrant designation for convenient use by alternative fuel freight fleets, as well as priority corridors for additional infrastructure investment.[20] This study uses several building blocks to evaluate corridors but does not factor in utility load-serving capacity.

If New Jersey undertakes a more in-depth study of ideal public truck charging sites, some factors this study should consider include: the locations of major freight corridors where truck traffic is high, proximity to freight-generating facilities (ports, warehouses, airports), and of course grid capacity, which would be a critical determinant to the cost impacts of building out public truck charging sites.

As an example for New Jersey to convene with neighboring states, electric utilities in Washington, Oregon, and California conducted a joint study, the "West Coast Clean Transit Corridor Initiative", to assess charging infrastructure needs for medium- and heavy-duty electric

[20] To view in-progress mapping elements informing NYMTC's Clean Freight Corridors planning study, see https://arcg.is/0abSWK0

trucks along the entire length of the Interstate 5 corridor (from the Mexico to Canadian borders) and interconnecting highways. The West Coast Clean Transit Corridor Initiative includes nine investor and publicly owned electric utilities as well as two municipal utility associations. The full coalition includes: Los Angeles Department of Water and Power, Pacific Gas & Electric Company, Pacific Power, Portland General Electric, Puget Sound Energy, Sacramento Municipal Utility District, San Diego Gas & Electric Company, Seattle City Light, Southern California Edison, Southern California Public Power Authority, and Northern California Power Agency.[21]

6) Strengthen inter-agency coordination and transparency to speed up ZEV adoption.

The BPU and its sister agencies, including the Department of Environmental Protection (DEP) and the Economic Development Agency (EDA) have a track record of collaboration, which needs to be further strengthened to harmonize policies relating to MHDV electrification to achieve equity and the desired benefits to overburdened communities. NJDEP, NJEDA and BPU are critical partners to advance ZEV adoption in the state.

Specifically, the BPU should be thinking proactively about how to craft charging policies that will support New Jersey's adoption of the ACT rule and the sales targets contained therein. Establishing harmonized goals and policies across agencies helps to align incentives and provides fleet owners with certainty, which is critical to fleet electrification as envisioned by DEP under the ACT. Failure to give fleets infrastructure cost certainty could harm electrification efforts. Adoption of the ACT should be closely tied to the charging infrastructure buildout this Straw Proposal is meant to address.

CCEV stresses that fleets will not buy, and cannot drive, MHD-EVs if they cannot be charged. New Jersey needs a plan to interconnect chargers to serve all the vehicles predicted to be purchased under the timelines in the ACT. New Jersey's agencies must develop a joint plan to provide much of the infrastructure that will be needed, particularly during early compliance years.

In short, coordination between BPU, the DEP, and the EDA is imperative to ensure that both public agencies and utilities are ready to rapidly scale up zero-emission infrastructure. The Straw Proposal should be revised to include ratepayer-funded utility-side make-ready support from utilities for fleets, including depot charging. For reference, the California Public Utilities Commission (CPUC) has already authorized nearly $700 million in make-ready investment for MHD fleets by California's three major investor-owned utilities.31 These utility investments also do not differentiate between private and public fleets. This investment ensures needed charging capacity for heavy-duty electric vehicles, with fleets able to charge the ZEVs that they purchase.

In June 2019, Governor Murphy announced the New Jersey Partnership to Plug-In among NJDEP, NJBPU and NJEDA to establish a common framework for vehicle electrification and meet the State's goal of registering 330,000 ZEVs by 2025.[22] The creation of the partnership was a step in the right direction, although it remains unclear how the organizations have been

[21] https://westcoastcleantransit.com/resources/Final%20Report%20Files.zip
[22] https://www.nj.gov/governor/news/news/562019/docs/MOU_6.3.19.pdf

collaborating in the development of the ACT rule, NJZIP and BPU's utility-centered efforts. A possible lack of alignment is reflected by the fact that the Make-Ready incentive outlined in the present Straw Proposal targets vehicle classes 4 to 8, while the ACT rule targets classes 2b through 8,[23] and NJZIP targets classes 2 to 6.[24] CALSTART believes that for New Jersey to maximize ZEV adoption and ensure its sales goals are met, agencies must have a clear shared strategy that prioritizes the same vehicle applications (namely, the beachhead applications) and supports their adoption through the competitive advantages of each agency in the Partnership to Plug-In.

The Straw Proposal's Question 10 asks: "how participation in other State-sponsored EV adoption programs should be weighed in consideration for utility incentives?" Other peer states have attempted this coordination in different ways: New York's Public Service Commission ensured consistency between its infrastructure and vehicle programs by conditioning eligibility for the $15 million MHD Make-Ready Pilot on whether a fleet (private or public) has been approved for participation in either the New York Truck Voucher Incentive Program or the New York City Clean Trucks Program.[25] Other jurisdictions have prioritized infrastructure make-ready support on a non-exclusive basis to fleets that have received vehicle funding. California's investor owned-utilities are certainly aware of the vehicles being ordered with support from HVIP and aim to ensure they are able to interconnect before vehicles are delivered, but the CPUC did not predicate utility investment based on the receipt of a voucher. Therefore, CCEV would not recommend that utility support be tied to a voucher program, especially since New Jersey currently lacks a voucher program that covers all parts of the state and all MHDV classes.

7) <u>Address best practices for utilities' fleet advisory services</u>

Straw Proposal Question 14 asks: "what types of outreach and education are most likely to be successful in the MHD sector? Are there tools that utilities or EVSE Infrastructure Companies can provide to fleet owners to access the feasibility of electrification? (p. 17)"

CCEV suggests that the Straw Proposal be further fleshed out to include the types of fleet services that New Jersey's utilities should be enabled to provide in programmatic filings that follow this proposal. We would suggest the following categories of utility services:

A. Fleet planning tools

It is important that utilities have program offerings that aid in the complex matter of transitioning fleets to zero-emission. Putting together an effective plan for such a transition involves an objective understanding of the fleet make-up, duty-cycle, operational needs, and current infrastructure limitations, where relevant.

Leading utilities currently provide tools for fuel planning such as Southern California Edison's (SCE) Fleet Fuel Savings Calculator[26]—which helps fleets understand the potential

[23] https://www.nj.gov/dep/rules/notices/20210419a.html
[24] https://www.njeda.com/njzip/
[25] https://jointutilitiesofny.org/ev/make-ready/mhd-pilot-program
[26] https://fleetfuelcalculator.sce.com/

cost savings compared to the cost of diesel. While some assumptions embedded within this tool are specific to SCE, the overall approach to cost savings estimation is incredibly useful for fleet operators to understand the potential operational savings resulting from electrification.[27]

B. Fleet advisory services

The inherently complex process of fleet electrification has given rise to a variety of entities and new business models for offering technical assistance to fleets transitioning to ZEVs. Advisory services offered may include site-assessment for make-ready, fleet and duty-cycle analysis, and tailored vehicle recommendations based on vocational need. CCEV would recommend that it is an appropriate role for utilities to help fleets, especially in the early stages of considering EVs, to provide these services in at least a limited fashion and provide a platform for non-utility service providers to engage with prospective fleet customers. Such a platform can include a preferred vendor list, and other means of helping fleets locate suitable partners in building out their EVSE. The role of the utility may be somewhat different in assisting small or public fleets, whose resources may be limited.

C. Other tools: feasibility studies, etc.

CCEV has advocated for other utilities and public agencies to provide services such as site feasibility studies, electricity bill projections, and, as discussed above, help fleets in choosing sites where interconnections might be expedited (such as by sharing capacity maps). etc. It is important that these types of site services help fleets plan for growth of their EV fleet and not just the initial deployment. Customers should be encouraged to plan ahead for scale, even if they are anticipating a small initial purchase. A goal should be adopted to help fleets avoid "throw-away infrastructure", which can occur when a fleet initially installs 2-3 chargers and then needs to re-build their charging depot to accommodate 10 or 20, and ends up ripping out the original infrastructure (made with ratepayer investment). New Jersey's utilities should help fleets "future proof" their MHDV investments for future growth and future advancements in fleet charging technology.

We also see value for utility fleet planning and infrastructure programs to encourage load management solutions, to both lower the cost of charging and to lessen the potential for negative grid impacts. We would encourage New Jersey to address load management solutions in the Straw Proposal.

D. Financing and turnkey offerings

Even with financial support in the form of make-ready assistance and more compatible rate designs, the upfront costs of MHD-EVs and associated charging equipment are likely to remain a barrier to large-scale adoption until at least the middle of this decade in some vehicle segments. However, the emergence of innovative private financing models bears significant

[27] CALSTART is in final stage development of a fleet planning tool for medium- and heavy-duty vehicle infrastructure, including timeline and cost estimates. This tool, among other resources for fleets of various vocations, may be found on an online Infrastructure Readiness Center planned for launch in late fall of 2021.

promise to deploy large sums of capital to finance electrification projects at scale and to leverage the positive business case from well-utilized EVs that cost less to operate and maintain over time than their diesel counterparts. Battery leasing, charging-as-a-service, and full-service fleet-as-a-service products are exemplary of innovative models now available from private-sector parties including manufacturers, infrastructure providers, and third-party developers.[28]

In conjunction with capital support for both vehicles and infrastructure, private financiers are increasingly willing to deploy their own capital to accelerate electrification by centralizing electrification processes and bundling costs. BPU can work with utilities and help them take lessons learned from early adopters and industry to educate fleets on how a combination of utility programs and third-party capital can facilitate their efforts to justify fleet electrification within their budgets.

8) Other Issues BPU Should Consider

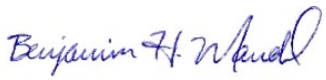
CCEV members include OEMs currently developing and selling hydrogen fuel-cell medium- and heavy-duty vehicles. Hydrogen fuel-cell vehicles are particularly well adapted to long-range travel and heavy-duty applications. Therefore, we would encourage BPU in a subsequent or amended Straw Proposal, to consider the role of hydrogen production, and potential development of a favorable electricity rate design structure for hydrogen to support medium- and heavy-duty vehicles. Hydrogen production, when using renewable energy, could offer benefits to grid operators and utility customers.

III. Conclusion

New Jersey has taken an important step forward through the BPU's proposal of make-ready infrastructure financing, fleet planning services and utility rate structure reform for MHDVs. To meet the states ZEV, climate, and air quality goals, efficient and effective utility and ratepayer investments to support fleet electrification will be critical, because without utility support for infrastructure, the total-cost-of-ownership (TCO) of MHD-EVs will be unknowable, and potentially unfavorable. If the TCO of ZEVs is not favorable for fleets in the near term, they will be unwilling and/or unable to make the switch to electric vehicles. Thus, CCEV appreciates your considerations of our comments on the Straw Proposal, in furtherance of New Jersey's leadership on transportation and freight decarbonization. CCEV members stand ready and willing to grow the MHD-EV market in New Jersey, but they will not be able to do so without the commitments by BPU and the state's utilities to build out the necessary charging infrastructure.

[28] For more information on financing barriers and potential solutions for commercial fleet electrification, see https://globaldrivetozero.org/site/wp-content/uploads/2021/03/Taking-Commercial-Fleet-Electrification-to-Scale-White-Paper.pdf

Sincerely,



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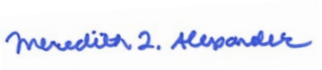

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