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October 5, 2021

SUBMITTED ONLINE

Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
Post Office Box 350
Trenton, New Jersey 08625

Re: Comment of Environmental Defense Fund on Docket No. QO21060946, In the Matter of Medium and Heavy Duty Electric Vehicle Charging Ecosystem

Dear Secretary Camacho-Welch:

Environmental Defense Fund (“EDF”) respectfully submits this comment to New Jersey Board of Public Utilities (“Board” or “BPU”) Docket No. QO21060946, In the Matter of Medium and Heavy Duty Electric Vehicle Charging Ecosystem. As directed in the Notice dated August 5, 2021, these comments are submitted to the docket before 5:00pm ET on October 5, 2021, and thus are timely filed.

Respectfully submitted,

Elizabeth B. Stein

**COMMENTS OF ENVIRONMENTAL DEFENSE FUND
ON
MHDV STRAW PROPOSAL**

**Docket No. QO21060946, In the Matter of Medium and Heavy Duty Electric Vehicle
Charging Ecosystem**

I. INTRODUCTION

EDF is a membership organization whose mission is to preserve the natural systems on which all life depends. Guided by science and economics, EDF seeks practical solutions to resolve environmental problems. EDF uses the power of markets to speed the transition to clean energy resources, and consistent with its organizational purpose is engaged in activities to facilitate cost-effective and efficient energy market designs that encourage investment to modernize the energy grid so that it can support the ongoing deployment of renewable energy resources, new electric technologies that avoid fossil fuel combustion and attendant emissions (such as transportation and building electrification), and energy efficiency. EDF has been focused on driving the adoption of clean trucks and buses for over 20 years, including collaborating with commercial entities to accelerate technology development as well as engaging in transformative legislative and regulatory initiatives focused on reducing greenhouse gas emissions and diesel emissions that harm public health especially in vulnerable populations.

EDF marries its extensive background working towards a transformation of the medium- and heavy-duty vehicles (“MHDV”) sector with a robust history of engagement focused on ensuring a clean, cost-effective, and equitable utility energy system. In multiple states and in federal fora, EDF has advocated for reductions in pollution associated with these vehicles, as well as the build-out of a market and electric grid that give intermittent renewable resources an opportunity to thrive in the near term – while also providing the additional reliability and resiliency needed to prepare the electric system for a high-renewables future. In California, where vehicle electrification is well underway, EDF has been a strong voice advocating before that state’s Public Utilities Commission for well-designed utility charging infrastructure deployment programs in order to ensure efforts in this regard are cost-effective, beneficial for the grid and the environment, and equitable. Here in New Jersey, we have advocated, in various matters before the BPU as well as in other State fora, for robust vehicle electrification as well as efficient electric rate designs that optimize environmental outcomes while minimizing costs. In the present proceeding, we participated in the September 15 and September 21 stakeholder panels, where we focused on rate design as a component of vehicle-grid integration and the critical connection between managed charging, behind the meter distributed energy resources and affordable grid decarbonization.

Transforming the medium- and heavy-duty vehicle sector from internal combustion of fossil fuels to non-emitting technologies is essential for any strategy to avert the worst impacts of climate change and advancing public health and justice, especially in disadvantaged communities. Given the size and extent of our society's dependence on diesel fuel and the longstanding custom of disregarding the profound environmental and public health harms associated with diesel emissions, this transformation is no small challenge. But the good news is: The technology has arrived. Trucks and buses that are entirely without tailpipes are available for a large and growing range of use cases, and from a vehicular standpoint, the pathway to a stable climate and clean air is reasonably clear. Moving from the installed base of ubiquitous infrastructure for fueling diesel – much of it long since paid for and thus available today for use at very low cost – to a new system built to charge non-polluting vehicles is the steeper challenge. And we appreciate that getting the electric system to meet that challenge at the same time as it prepares for a clean generation future means that the Board, and the EDCs, are facing down multiple layers of transformational challenges.

As daunting as these layered challenges are, the most promising approach will be to look at these transformational needs together, because therein lies opportunity. While each of these challenges is daunting, they are more complementary than conflicting. Electric trucks and buses are a significant new load, but they are also well suited to pairing with on-site renewables and fixed batteries, and the vehicles themselves can be harnessed to provide grid-level storage benefits at orders of magnitude lower cost than conventional batteries.

The MHDV straw proposal issued in June (the “Straw Proposal”) represents an important step toward this cleaner, more stable future. We appreciate the thoughtful care that went into the document itself, as well as the rich stakeholder panel discussions throughout August and September, including the two panels in which EDF had an opportunity to participate directly. However, although the Straw Proposal incorporates elements that are vitally important, other critically important elements are missing, and overall it does not seem to lay the groundwork for transportation/freight sector transformation at the scale that New Jersey is seeking.

EDF's top-level comments on the Straw Proposal can be summarized as follows:

1. The Straw Proposal does not acknowledge, or endeavor to meet, any MHDV electrification goals, and the Board's final order should commit to concrete goals that are in line with New Jersey policy.
2. Non-publicly accessible charging locations should be eligible for ratepayer support.
3. To ensure an efficient, equitable transition, the Board needs to require much more proactive planning by EDCs, over various time horizons.
4. Interagency coordination is essential to successful MHDV electrification, and BPU has an opportunity to lead.
5. MHDV electrification is fundamentally different from light-duty vehicle electrification, and the BPU's programs should treat them separately.

6. Equity and communities need more, and more sustained, attention.
7. The BPU's ultimate order on the topic of the MHD EV Ecosystem must prioritize the potential of vehicle-grid integration and distributed energy resources to magnify the benefits of MHDV electrification and lower its cost.
8. To enable successful MHDV electrification in New Jersey, the BPU and the EDCs must proactively engage with fleets.
9. The BPU should require consistent standards as part of all EV programs.
10. Electric pricing needs to allow for a favorable business case for electric vehicle charging while also incentivizing charging customers to use the grid in the most beneficial possible way.
11. To ensure EDC and Board accountability, the Board should require that cost-effectiveness be determined in a consistent, robust manner, and should set clear reporting requirements and metrics for evaluating the success of utility electrification efforts.

We thank you for the opportunity to submit these comments and provide an important perspective on New Jersey's EV development.

II. DISCUSSION

1. **The Straw Proposal does not acknowledge, or endeavor to meet, any MHDV electrification goals, and the Board's final order should commit to concrete goals that are in line with New Jersey policy.**

New Jersey policymakers recognize the role MHDV electrification must play in achieving significant reductions in both greenhouse gas emissions and local air pollution in the state. The state's Plug-in Vehicle ("PIV") Law targets all state-owned non-emergency vehicles to be EVs by 2035 and all bus purchases by the New Jersey Transit Corporation to be zero-emission buses by 2032,¹ while also tasking the BPU with supporting the Department of Environmental Protection ("DEP") in establishing "other goals for vehicle electrification and infrastructure development that address medium duty and heavy-duty on-road diesel vehicles and associated charging infrastructure".² Further, as a signatory to the NESCAUM Memorandum of Understanding on Medium- and Heavy Duty Zero Emission Vehicles, New Jersey has committed to strive for all new truck and bus sales in the state to be zero-emitting by 2050, and for 30% of all such sales to be zero-emitting by 2030.³ The Straw Proposal acknowledges these goals and references them as sources of authority. But, the Straw Proposal fails to explicitly adopt any of these MHDV goals, instead only stating the Board's "commitment" to the PIV law's target of having 330,000 light duty vehicles registered in the state by 2025⁴ – a goal that has no relevance to this Straw Proposal. While this may be an unintentional implication, the

¹ N.J. Stat. § 48:25-3(a)(8)-(9).

² N.J. Stat. § 48:25-3(a)(10).

³ Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding (July 14, 2020), available at <https://www.nescaum.org/documents/multistate-truck-zev-governors-mou-20200714.pdf>.

⁴ QO21060946, *In the Matter of Medium and Heavy Duty Electric Vehicle Charging Ecosystem*, Notice of public meeting to discuss New Jersey Electric Vehicles Infrastructure Ecosystem 2021 – Medium and Heavy Duty Straw Proposal, at 12 (July 2, 2021) (The Board is committed to Governor Phil Murphy's stated goal of having 330,000 EVs registered in New Jersey by 2025), available at https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1243671 [hereinafter "Straw Proposal"].

omission of any express statement of commitment to any of the State’s particular MHDV electrification goals, including any clear commitment to any goals the DEP may be establishing in consultation with the BPU as required by the PIV law (see also section 4 of this Discussion), suggests a possible lack of commitment on the part of the BPU to actually achieving the large-scale MHDV electrification that is necessary and called for by existing state laws and policies.

The lack of any substantive goals for electric MHDV deployment on the part of BPU undermines other portions of the Straw Proposal. For example, under the proposal’s “last resort” provision, electric distribution companies (“EDCs”) “may petition the board” to operate electric vehicle service equipment (“EVSE”) in areas that haven’t received EVSE investment within one year of the commencement of such EDC’s MHDV program for Overburdened Communities.⁵ This, however, sets no timeline for the actual deployment of EVSE in these areas, which could lead to much slower deployment in the Overburdened and low-income communities that are more likely to rely on this Provision. Failure to include specific deadlines and targets for MHDV electrification and EVSE deployment in Overburdened Communities risks leaving those communities behind, exacerbating the inequities the proposal is meant to help address and decreasing the likelihood of New Jersey actually meeting its long-term climate and energy targets.

More broadly, the absence of any stated goals or timetable for preparing the electric system for the arrival of electric MHDVs at scale means that there is no yardstick for success or failure, nor to identify whether EDCs are progressing at an appropriate pace, nor to identify the need for course corrections. In other words, the absence of any goals or timeline means that under the BPU’s Straw Proposal, the EDCs could conceivably make only de minimis steps in the direction of electric charging infrastructure over any foreseeable timeline, and although New Jersey’s statewide efforts to meet climate and public health goals would be frustrated, neither the EDCs nor the Board could be said to be falling short in any particular respect.

The solution to this is for the BPU to set clear goals for the scale of MHDV electrification that the EDCs need to be able to serve at specified points in time. These goals should be based on those set by existing New Jersey laws and policies; should be harmonized with those of other relevant agencies, including the Department of Environmental Protection (the “DEP”); should be integrated into the specific provisions of the Straw Proposal; and should include clear metrics that the BPU and others can use to measure the degree to which the goals are being met.

2. Non-publicly accessible charging locations should be eligible for ratepayer support.

*This section is responsive to the first Staff request for input on page 2, the second Staff request for input on page 3, the Staff request for input on quasi-public fleets on page 13, and the Staff request for input on private fleets on page 13 of the Straw Proposal.*⁶

⁵ A further discussion of what should be included in EDCs’ programs for Overburdened Communities is addressed in section 6 of this Discussion.

⁶ “1. A modified “shared-responsibility” model for MHD charging infrastructure that promotes appropriate roles for both the EDC and private investors and promotes private efforts to drive MHD adoption.” Straw Proposal at 2. “Funding of the MHD EV Ecosystem, which builds on the shared responsibility model as laid out in the Light-Duty EV Ecosystem minimum filing requirements “ *Id.* at 3. “Staff also seeks input on how to address quasi-public fleets (i.e., buses contracted by NJTRANSIT or other local governments, transportation hubs, etc.)” *Id.* at 13.

The Straw Proposal states clearly on page 2 that as part of the proposed shared responsibility model, “EDCs would be responsible for the wiring and backbone infrastructure necessary to enable a robust number of publicly accessible or public-serving MHD Make-Ready locations” and that non-publicly accessible MHD EV Ecosystem infrastructure “may not be eligible for direct ratepayer support”. This categorical position suggests a deep misunderstanding of the fundamental differences between light-duty EVs and MHD EVs, and risks hamstringing the success of any programs adopted under the Straw Proposal.

If non-publicly accessible MHDV charging is entirely excluded from ratepayer-funded programs, this Straw Proposal will accomplish little, because the business reality is that early in the electrification process, virtually all fleet charging will take place at private depots that are devoted to meeting the needs of a single user. Unlike the light-duty vehicle space, where customers’ vehicle use can vary wildly from one day to the next and ubiquitous public charging is a prerequisite to many customers to be willing to own EVs at all, early adopters of electric MHDVs are unlikely to care very much about being able to charge wherever and whenever they want. Instead, what MHDV owners and operators care about is being able to charge in the time, place, and manner that their business needs dictate—in most cases, at a depot at relatively predictable times, in a manner where they know they can count on *their* equipment being available for *their* exclusive use. Even before the cost of make-ready, the upfront cost of electrifying a fleet—between the need to acquire the vehicles and chargers as well as extensive soft costs—is steep, and as a practical matter, expecting such extensive private investment to occur without any support is unrealistic, especially for small fleets that are not owned by entities with ready access to capital. A make-ready approach that excludes the type of charging that most early adopters will require risks shooting New Jersey’s MHDV electrification goals in the foot.

Electric MHDVs, even more so than electric light-duty vehicles, can provide palpable public benefits as soon as they are put on the road. Every electric truck that replaces a highly-polluting diesel truck on New Jersey’s roads, especially in Overburdened Communities where residents suffer from inequitable air pollution burdens, can bring real public health benefits. To remove diesel pollution from New Jersey communities at scale requires all New Jersey’s regulatory agencies to row in the same direction, and a willingness to fund the charging infrastructure that is needed to remedy the public health emergency that many New Jersey residents face every day, walking the sidewalks of their communities.

Moreover, make-ready depot charging should be eligible for ratepayer support because such charging can be helpful to ratepayers as a whole. The Straw Proposal’s refusal to support non-publicly accessible charging infrastructure is misguided because it fails to account for the fact that the exclusive use of charging infrastructure at a given location by a single user that manages its charging use in a mindful, strategic manner is a good thing, not a bad thing, for the electric system. A Synapse study of light-duty vehicle electrification found that from 2012 to 2017, “EVs in California have increased utility revenues more than they have increased utility

“Additionally, Staff does not propose EDC incentives for private-owned fleets, but notes that the New Jersey Economic Development Authority is currently working on programs in this area. To ensure equitable access to EVs and their positive impact on emissions, Staff seeks input on what best practices might be applied and what funding sources are most appropriate to fund private fleet programs.” *Id.* at 13.

costs, leading to downward pressure on electric rates for EV-owners and non-EV owners alike.”⁷ Synapse attributed this effect largely to the fact that private EV owners largely charged off-peak, improving grid asset utilization. A similar dynamic may exist for MHDVs as well, and is most likely to be realized in the context of private depots. Private charging at depots can be made predictable and, especially with VGI and DERs, even flexible. Well-designed non-publicly accessible charging is potentially very well situated to be a grid resource that helps lower costs for all customers, both by mitigating the need for costly grid build-outs at various scales, and by improving the grid’s ability to integrate intermittent renewable resources with less curtailment and better economics.

Finally, it is telling that the Straw Proposal recommends that an “EDC-Industry working group” would be created to address non-publicly accessible MHD EV Ecosystem issues, insofar as it is not clear what “Industry” is intended to be included (EV manufacturers and EV charging seem like possible candidates), but it appears to gloss over the critical voice of one of the most important stakeholders: fleet owners and operators, who come from a wide range of industries as well as including non-commercial entities. The inability to appreciate the importance of the customer perspective on this transition goes hand-in-hand with the inability to appreciate the fundamental differences between MHDV electrification and light-duty electrification. As discussed further under section 8 of this Discussion, the fleet perspective is absolutely essential to any reasonable understanding of what fleet charging will actually be like, and far more must be done to make sure that the EDCs as well as the BPU itself are informed by that perspective.

3. To ensure an efficient, equitable transition, the Board needs to require much more proactive planning by EDCs, over various time horizons.

A transition to electric MHDVs cannot happen on a scale anywhere near what is necessary without robust, long-term planning on the part of utilities. The BPU’s proposals begin to address this central issue, but do not go far enough.

The Make-Ready Map Proposal included in the Straw Proposal would be a valuable tool, allowing for developers of charging infrastructure to anticipate where MHDV electrification might be feasible on a rapid timescale – and especially valuable in its ability to improve the utilization of currently underutilized grid assets. While this is useful, it has some clear limitations insofar as the extent to which a particular geographic location happens to be served by portions of the electric grid that are not currently congested should not be the only, or the main, determinant of where MHDV charging infrastructure is located. For example, eliminating tailpipe emissions in Overburdened Communities with poor air quality is critically important, as the Straw Proposal has recognized,⁸ even if it happens that current grid conditions in such areas are not especially friendly to MHDV charging development in the near term. Similarly, near-term MHDV electrification will also likely be needed in other areas that are not necessarily identified as favorable in the Make-Ready Map, such as locations where one or more truck or bus fleets are currently located and likely to remain for compelling logistical reasons of their own.

⁷ Synapse Energy Economics, Inc., *Electric Vehicles Are Driving Electric Rates Down* 4, February 2019, available at <https://www.synapse-energy.com/sites/default/files/EVs-Driving-Rates-Down-8-122.pdf>.

⁸ “Overburdened Communities are more likely to access public and quasi-public transportation options and are more likely to have greater exposure to emissions from MHD vehicles in general.” Straw Proposal at 12.

This brings us to the more fundamental limitation of the Make-Ready Map as a “planning” tool, which is that it is primarily a tool for parties other than the EDCs—who already know their system well enough to know what areas will be identified on those maps—and does not speak to the critical need for electric utilities to begin their own, system-wide planning for an electric transportation/freight future. The Make-Ready Map will be a powerful tool in that it will give third parties some visibility into utility grid capabilities, helping them to improve their own near-term proposals. However, given the scale and speed of the transition that is expected and needed and the customary slowness of traditional grid expansions (e.g., upwards of ten years for a single new substation)—and given the extent to which individual electric vehicle charging deployments will need to be integrated with one another and with other aspects of the electric system—the utilities themselves must begin proactively planning for the transition across various time horizons, including planning for periods far longer than the usual horizon of a rate case. Because many grid upgrades may not be necessary when a single fleet customer electrifies, but will be increasingly likely as larger numbers of fleets electrify, expecting individual customers to do the planning is not just inefficient, it is impossible; the EDCs are better positioned than *any other entity* to identify the expected charging requirements of *all* fleets collectively, including those that haven’t yet expressed interest in electrifying, and the impact of those new users on the grid. To that end, each EDC should be undertaking distribution grid impact study (“DGIS”) that analyzes likely future fleet electric needs as well as the grid upgrades and non-wire solutions (such as VGI and DERs, as discussed below) to determine how fleet electrification can occur at the lowest overall costs to ratepayers and the community. Ideally, these same studies would account not just for fleet electrification but for other forms of electrification and other foreseeable load growth, as well as other aspects of the energy transition such as those that can be anticipated based on renewable generation and storage targets. Only with the benefit of such robust analysis that reveals the potential cost of grid buildouts in the absence of mitigation can the true value of VGI, microgrids, and DERs that mitigate the need be assessed.

Importantly, planning for the electric transportation/fleet future is not a one-time activity; rather, it must be iterative over the coming decades. The BPU should require utilities to complete annual load research reports to measure how EVs (along with other DERs and electrification efforts) are impacting the grid, the effectiveness of various utility programs and program tools (including without limitation price signals), and the overlap between EV charging and renewable energy availability. Only by regularly analyzing this information can utilities and the BPU determine whether MHDV electrification goals are being met and where policy changes are needed. In addition, EDCs should re-evaluate progress toward established targets at regular intervals (ideally annually) and can present such analysis as part of the load research report or in conjunction with it.

4. Interagency coordination is essential to successful MHDV electrification, and BPU has an opportunity to lead.

In addition to not expressly committing to the vehicle electrification goals approved by New Jersey legislators and the Governor, other omissions from the Straw Proposal evoke the worrisome possibility that BPU may be working in a silo wholly separated from the efforts of its sister agencies—particularly the DEP and New Jersey Economic Development Authority (“EDA”)—and the relevant work they are doing on the topic of MHDV electrification. The regulations and incentives adopted by these agencies will play a significant role in determining how quickly MHDV electrification can, or must, happen by particular dates, which in turn

determines how much electric vehicle load the EDCs must expect to serve. Aligning policies across agencies is therefore essential for facilitating the transition while minimizing costs, contradictory requirements, and delays experienced by MHDV owners and operators.⁹

For example, there is an urgent need for BPU to ensure that its efforts will support the efforts that will be launched as a result of the Advanced Clean Trucks (“ACT”) rule that is currently under consideration by DEP.¹⁰ Adoption of this rule would have a significant effect on the rate of MHDV electrification in New Jersey, a process that must be accompanied by large-scale charging infrastructure buildout and likely some level of grid capacity increases. Unfortunately, the Straw Proposal is silent on the ACT. Failure to align the BPU’s policies with the requirements of the ACT could mean that fleet owners are forced to purchase electric vehicles without sufficient charging infrastructure in place, or even that the ACT’s purpose of requiring a share of MHDV vehicle sales to be electric MHDVs after a date certain could be frustrated. Instead of BPU and DEP creating independent MHDV policy frameworks in separate siloes, which will mean higher costs and worse outcomes for fleet owners and ratepayers alike, BPU has an opportunity to model leadership by actively working with DEP and other relevant state agencies to harmonize their respective policy approaches. Effective interagency engagement, early and often in the MHDV electrification process, will mean the opposite, with faster, cheaper electrification benefitting all.

5. MHDV electrification is fundamentally different from light-duty vehicle electrification, and the BPU’s programs should treat them separately.

This section is responsive to the first Staff request for input on page 17 of the Straw Proposal.¹¹

The Straw Proposal states that “Staff recognizes that many large light-duty fleets have similar energy requirements as smaller MHD charging needs,” and requests that Stakeholders provide information on “where that threshold should be”.¹² In our experience, this is simply not true; rather, light-duty and medium/heavy-duty vehicles have vastly different needs in terms of energy levels and charging speeds, such that treating the two as comparable will quickly lead to serious missteps and undermine efforts to accommodate the transition for either segment.

For this reason, building the MHD EV Ecosystem funding proposal “on the shared responsibility model as laid out in the Light-Duty EV Ecosystem minimum filing requirements” is a foundational error. The shared responsibility model for the Light-Duty EV Ecosystem is inapposite to MHDV electrification and to the extent there is any relevance at all, that relevance is largely coincidental and exists only in the context of niche applications. Specifically, widespread public charging is fundamental to jumpstarting widespread electrification of privately owned LDVs achievable, but MHDVs by their nature will mostly be charged at private depot locations, with public or shared charging playing at most a limited role, especially early on. In the context of small businesses with limited resources and only one or two MHDVs,

⁹ See also the September 9 comments we submitted jointly with CALSTART, Environment New Jersey, Natural Resources Defense Council, Sierra Club in response to the August 24 and August 26 Stakeholder panels.

¹⁰ Advanced Clean Trucks Program and Fleet Reporting Requirements, 53 N.J. Reg. 588(a) (Apr. 19, 2021).

¹¹ “While it is clearly defined that MHD charging would be used by Medium and Heavy Duty Vehicles, Staff recognizes that many large light-duty fleets have similar energy requirements as smaller MHD charging needs. Staff seeks information on where that threshold should be – is it the number of light-duty vehicles that need to charge at once, or some energy capacity threshold?” Straw Proposal at 17.

¹² Straw Proposal at 17.

public charging may be an important resource, but early adopters of MHDVs are likely to be almost exclusively larger fleets that will make little or no use of such charging. This foundational error of expecting MHDV electrification and charging to be comparable to LDV electrification and charging appears to be the basis for the misplaced insistence that non-publicly accessible charging locations—which are absolutely the starting point of New Jersey’s electric MHDV future—should be categorically ineligible for make-ready support, as discussed in section 2 of this Discussion.

6. Equity and communities need more, and more sustained, attention.

*This section is responsive to the Staff requests for input on the equitable distribution of EVSE on page 15 of the Straw Proposal.*¹³

In 2020, when stakeholders had an opportunity to comment on the Electric Vehicle Infrastructure Ecosystem Straw Proposal, EDF devoted its comments largely to arguing for the inclusion of MHDVs in the resulting order and programs, at a minimum to the extent that the Plug In Vehicle Act’s requirement that *all* New Jersey Transit buses be electrified compelled the inclusion of transit buses at a minimum in any electrification vision for the state. Despite the relevant statutory deadlines, the BPU declined to take any action in support of that sector at that time, but expressly recognized that equity would compel further action in that area, stating:

“Staff recognizes that equity is closely tied to the electrification of the medium- and heavy-duty sector. As a result, there will be a separate straw proposal, currently scheduled for Fiscal Year 2021, on medium- and heavy-duty electrification, which may address electric transit and school buses, as well as other methods to ensure equitable electrification.”¹⁴

As such, we were pleased to see that the MHDV Straw Proposal was in fact issued during Fiscal Year 2021, and that the BPU has set an aggressive schedule for action. The Straw Proposal now under discussion does recognize that equity plays a role in the MHDV space, but we would submit that the framing of the role of equity is excessively narrow as currently presented. For successful MHDV electrification that yields benefits that are equitably distributed will require a broader understanding of what is at stake, as well as a sustained effort to give Overburdened Communities a seat at the table and an opportunity to help shape the resulting programs.

The section of the Straw Proposal that is expressly on equity reads as follows:

“This Straw seeks to ensure equitable geographic diversity, particularly with respect to ensuring a viable EV Ecosystem in low-income, urban, and environmental justice

¹³ “Staff specifically requests comment on (1) how to identify and address unique transit opportunities in Overburdened Communities, (2) how local fleet investment would improve environmental and health factors, and (3) how to best utilize EV technology for expanded transportation options.” Straw Proposal at 15. “Staff is seeking comment on the best mechanisms to invest in public transit to promote equity in EVs and their benefits.” *Id.*

¹⁴ QO20050357, *In the Matter of Minimum Filing Requirements for Light-Duty, Publicly-Accessible Electric Vehicle Charging*, Order, at 7 (Sep. 23, 2020), available at https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1229093.

communities, referred to collectively as Overburdened Communities, or along designated evacuation routes.

“In particular, this Straw focuses on Overburdened Communities that may be identified as suitable locations for emerging EV mobility options – including electrified transit buses, mobility-on-demand, electric car sharing services, and local delivery fleets. Staff specifically requests comment on (1) how to identify and address unique transit opportunities in Overburdened Communities, (2) how local fleet investment would improve environmental and health factors, and (3) how best to utilize EV technology for expanded transportation options.

“In addition, Staff is aware that the electrification of public transit, specifically New Jersey’s transit buses, would reach the greatest number of New Jersey communities. Staff is seeking comment on the best mechanisms to invest in public transit to promote equity in EVs and their benefits.”

This is all laudable, and equitable access to charging is a factor in MHDV electrification, although the issue presents somewhat differently than it does in the LD space. Speaking very broadly, as a general matter, in the LD space, equitable access to charging is a matter of ensuring that residents of Overburdened Communities have similar access to charging equipment, infrastructure, and business terms as residents of other all communities all over the state, even if they live in multi-unit dwellings or in areas where private market participants are apt to underinvest. In the MHDV space, however, equity doesn’t mean just ensuring that particular communities are not denied their fair share of what other communities are likely to be able to obtain; instead, equity in MHDVs must include meeting a range of needs that disadvantaged communities face that are qualitatively different—and greater—than needs that exist in the rest of the state.

One example of how equity is relevant in the MHDV electrification space, rightly recognized in the Straw Proposal, is public transit. Specifically, the Straw Proposal proposes that “[t]o ensure access to electrified transportation itself and equitable access to the benefits of electrification and to the positive impact they have on decreasing emissions, EDCs may provide up to 100% incentives for Make-Ready for charging infrastructure for public fleets, prioritizing those fleets serving urban and Overburdened Communities,”¹⁵ and provides further that EDCs should give “priority” to “sites that will provide greater access to electrified transportation to the general public and in particular to Overburdened Communities.”¹⁶

This prioritization of public transit will indeed make electrified transportation a reality for a broader swath of New Jersey residents. For New Jersey residents who don’t own cars, infrastructure for charging cars is of little use. Moreover, as EDF has previously stressed, transit bus electrification must be prioritized *because it is the law*. Developing a feasible, sustainable strategy to electrify NJ Transit depots is an obligation that relevant New Jersey agencies need to meet collectively, ideally through rigorous interagency collaboration.

¹⁵ Straw Proposal at 12-13.

¹⁶ Straw Proposal at 14.

Another example, which is touched upon in the Straw Proposal, is ensuring that the charging needs of small fleet owners are met. While growing experience from leading jurisdictions teaches us that non-publicly accessible depot charging will predominate in the early phase of MHDV electrification, small businesses that own only one truck or a few may indeed need to rely on some form of public or shared charging in their communities, including Overburdened Communities, and equity demands that the BPU and others begin developing a strategy for the development of a limited number of such charging facilities.

But an absolutely critical example of how equity matters in the MHDV electrification space, and one that is *not* given enough attention in the Straw Proposal, is the power of MHDV electrification to actually eliminate tailpipe pollution in Overburdened Communities. The Straw Proposal mentions that PM_{2.5} is disproportionately produced by MHDV vehicles and that it harms urban communities due to the concentration of emissions.¹⁷ What it does not note is that MHDV vehicles are also responsible for the *lion's share* of transportation-sector emissions of NO_x¹⁸ and SO₂.¹⁹ The human health impacts of all these diesel emissions are not spread “equitably” throughout the state; rather, as the Straw Proposal recognizes for PM (but not NO_x and SO₂, where the role of trucks and buses is even more pronounced), urban communities are especially harmed “due to the concentration of emissions.” This inequitable sharing of burdens today means that Overburdened Communities that have higher than typical air pollution burdens are entitled to swift, dramatic relief. In other words, Overburdened Communities deserve more than their fair share of MHDV charging. What they are entitled to is charging infrastructure (whether located inside or outside their community) that enables highly-polluting diesel vehicles of all kinds (not just transit buses) to be retired from their roads as soon as possible.

But don't just take our word for it: Make sure Overburdened Communities and their residents have an opportunity to tell the BPU how MHDV electrification can improve (and even save) lives, including the lives of people who don't necessarily drive and may not even be utility customers (for example, renters in buildings without direct metering). To that end, communities and groups representing various equity interests must be given an opportunity to help shape utility MHDV electrification programs, both at the outset and over the course of implementation. While the utilities and EV industry have expert knowledge about the electric system and EVs and their charging needs, and fleet owners have expertise in the operational and business needs of actual electrifying customers, communities have unique understanding of where diesel vehicles are doing the most egregious harm to public health—that is, where the need for cleaner air is the most desperate and the opportunity to improve people's well-being is the greatest. Both the BPU itself, as it develops MHDV electrification policy going forward, and the EDCs regulated by the BPU, must engage with community groups to ensure that the public health benefits of MHDV electrification are realized as soon, and as effectively, as possible.

The need for this engagement is especially urgent because community groups focused on equity broadly defined—including the right for residents of Overburdened Communities to experience much cleaner air as soon as practicable—are rarely sufficiently resourced to participate in full-scale proceedings at the BPU, while Rate Counsel focuses overwhelmingly on

¹⁷ See Straw Proposal at 9.

¹⁸ Gabel Associates, Inc., *Full Market Vehicle Electrification In New Jersey* 58, October 2020, available at <http://www.chargevc.org/wp-content/uploads/2020/10/ChargeVC-Full-Market-Electrification-Study-FINAL-Oct-7-2020.pdf>.

¹⁹ *Id.* at 59.

affordability above all other aspects of public interest, including climate change, clean energy, health challenges, and any other challenges currently experienced to an inequitable extent by Overburdened Communities.²⁰ By formalizing a role for community groups that are focused on quality of life in communities in shaping New Jersey’s path to MHDV electrification, the BPU can forge a credible pathway to supporting New Jersey’s broader efforts to address cumulative air pollution impacts in Overburdened Communities.

In the August 26 stakeholder panel, Rate Counsel’s representative specifically questioned whether BPU had any responsibility for health issues, and recommended “looking to the DEP and maybe other avenues as well.”²¹ It is certainly not wrong to acknowledge that DEP also has responsibilities pertaining to air pollution (see section 4 of this Discussion for a more on the need for BPU to coordinate with other agencies, particularly DEP), and DEP as well as EDA are taking relevant actions in this area. But the existence of these other agencies with some relevant jurisdiction does *not* constitute an argument that for BPU, inequitable air pollution impacts are of no relevance and that, as Rate Counsel argued, for BPU “Equity equals affordability”. To the contrary, the BPU has also been tasked by the legislature with preventing air pollution,²² which necessarily means that where utility service is being provided in a manner that does not “prevent” air pollution for certain New Jersey residents, those residents are facing an inequitable outcome relative to other residents and the Board should take an interest in that inequity. To that end, designing *utility programs* intentionally such that they alleviate inequitable air pollution burdens faced by Overburdened Communities is within BPU’s purview, and utility proposals should be evaluated accordingly.

With the input of stakeholders who are familiar with the particularized MHDV needs of New Jersey’s low-income customers, small businesses, and Overburdened Communities, targeted programs can be developed that meet these specifically identified equitable needs. In addition, to ensure that New Jersey’s MHDV electrification in fact produces equitable outcomes, particular levels of achievement on relevant parameters should be targeted and the EDCs should be held accountable for achieving them. For example, particular levels of availability of

²⁰ On August 26, when a representative of Rate Counsel participated in the stakeholder panel on Medium and Heavy Duty Impact on Overburdened Communities, she broadly disavowed the relevance of all equity interests of overburdened communities other than the affordability of their utility bills. “Rate Counsel is here to remind you that it’s important to remain focused on the affordability of these projects. Most medium- and heavy-duty EV projects that go before the board for consideration will ultimately be funded through increases to electric utility rates to New Jersey ratepayers. So ratepayers, in this situation, should only bear the cost of the projects where utility expertise is required. These projects should be associated with what is necessary for ratepayers to help fund. And so we have to keep in mind that equity equals affordability when we’re thinking about equity among overburdened communities.” See EV Stakeholder Meeting: Medium and Heavy Duty Impact on Overburdened Communities, held by the New Jersey Board of Public Utilities, at 00:8:00 (Aug. 26, 2021), available at <https://www.nj.gov/bpu/newsroom/public/>. See also Samantha Maldonado, ‘It’s not publicized’ – the BPU’s continued transparency problem, Politico (Feb. 10, 2021), available at <https://www.politico.com/states/new-jersey/story/2021/02/10/its-not-publicized-the-bpus-continued-transparency-problem-1362523>.

²¹ EV Stakeholder Meeting: Medium and Heavy Duty Impact on Overburdened Communities, held by the New Jersey Board of Public Utilities, at 01:25:00 (Aug. 26, 2021), available at <https://www.nj.gov/bpu/newsroom/public/>.

²² See NJ Rev Stat § 48:2-23 (2013) (“The board may, after public hearing, upon notice, by order in writing, require any public utility to furnish safe, adequate and proper service, including furnishing and performance of service in a manner that tends to conserve and preserve the quality of the environment and prevent the pollution of the waters, land and air of this State, and including furnishing and performance of service in a manner which preserves and protects the water quality of a public water supply, and to maintain its property and equipment in such condition as to enable it to do so.”).

charging, both publicly and in depots, for electric MHDVs that replace heavily polluting diesel MHDVs in Overburdened Communities, as well as charging that can be used by small businesses—as well as facilitating the development of charging for transit buses at a level that is sufficient for NJTransit to meet its statutory obligations—should be intentional goals of MHDV electrification, for which EDCs are held accountable (as further described in section 11 of this Discussion).

7. The BPU’s ultimate order on the topic of the MHD EV Ecosystem must prioritize the potential of vehicle-grid integration and distributed energy resources to magnify the benefits of MHDV electrification and lower its cost.

*This section is responsive to seventh and eighth Staff requests for input on page 3, and the fourth, fifth, and sixth Staff requests for input on page 17 of the Straw Proposal.*²³

When effectively deployed, vehicle-grid integration (“VGI”) and distributed energy resources (“DERs”) can benefit both EV owners and the grid. In its current form, the Straw Proposal makes oblique references to these technologies, asking for input on “the use of battery storage and the capability to charge and discharge specific EVs at certain locations and times, such that grid flexibility services are possible from the vehicle battery” and “the development of charging infrastructure supported by renewable energy,” but suggests no specific policies on these topics.²⁴ Whether viewed solely from the perspective of keeping electrification affordable, or from the more holistic perspective of the electric grid transformation New Jersey is demanding, VGI should be centered; participants in BPU electrification programs should be *required*, as a condition to their participation, to manage their demand, and the programs should include incentives to deploy DERs at charging locations and use them as part of VGI. For example, it would be wise to allow some forms of on-site renewables and storage to be eligible for inclusion in make-ready costs utilities may recovery through their rates. On-site renewables and storage can provide significant benefits to both fleets and to other users of the electric grid. For example, fleets with operations cycles that would leave them unable to shift charging to off-peak periods can use DERs to mitigate their demand, thereby minimizing demand charges and their own overall charging costs. This reduced demand also has the effect of reducing the extent to which grid upgrades will be needed to meet MHDV electrification goals. Further, VGI and DERs provide added resources for grid services to increase reliability and resiliency as NJ transitions to a zero-emission energy sector.

With the proper technology and price signals, VGI enables fleet owners and operators to go from being solely electricity consumers to providing a variety of important services to the

²³ “7. The development and expansion of MHD vehicle charging, including the use of battery storage and the capability to charge and discharge specific EVs at certain locations and times, such that grid flexibility services are possible from the vehicle battery. 8. The development of charging infrastructure supported by renewable energy.” Straw Proposal at 3. “How can the program encourage incorporation of renewable energy, storage, or Vehicle to Grid technologies into MHD charging solutions? Is there a threshold at which incorporating renewable energy, storage, or Vehicle to Grid technologies into the charging infrastructure should be a condition of Make-Ready? If so, what is that threshold? When considering the load associated with MHD charging, should solar and energy storage be coupled with these sites, whenever possible?” *Id.* at 17.

²⁴ Straw Proposal at 3.

grid. VGI includes both unidirectional charging services (also known as “managed charging” or “V1G”) and bidirectional services including vehicle-to-grid (“V2G”) and vehicle-to-building (“V2B”). Managing charging can help fleet operators shift vehicle charging away from peak demand periods to times with lower demand and lower electricity costs, and even provide voltage support and frequency regulation. With sufficiently granular price signals that include enough upside for efficient charging behavior, fleet owners can experience significantly reducing total charging costs, and all ratepayers, including non-participating customers, can reap benefits including grid congestion mitigation, added resiliency, and a reduced need for costly grid upgrades.²⁵

With the addition of bidirectional capability, vehicles can move from being solely consumers of energy to sources of it. EVs with V2G capability can store and discharge energy to the grid, further magnifying the ability of EVs to contribute to time-sensitive needs such as voltage support and frequency regulation.²⁶ As with V1G, using EVs to provide these services reduces the need for utilities to invest in infrastructure or procure ancillary services through other means, lowering costs for all ratepayers.

With the further addition of DERs such as solar and battery storage that are collocated with EVSE, even more effective mitigation of grid impacts from vehicle charging is possible. DERs can also produce significant cost savings when electricity rates include demand charges or whether other very high prices are in play during peak times (whether these are hourly generation costs, critical peak pricing, or other costs that can drive up bills), as these behind-the-meter resources can enable fleet owners to reduce their peak demand for grid energy that these times.²⁷

DERs and V2G capabilities also add resiliency to an electrified transportation system. On-site generation and storage can allow EVs to continue operating in the event of grid outages, a capability that is particularly important for emergency services and public transit. Additionally, where V2B capability is leveraged, vehicles batteries can serve as a source of power to a discrete facility during an emergency.

VGI and DERs are essential to efficient electrification at scale and to electrification complementing—rather than further complicating—efforts to reduce emissions from electric generation. But without deliberate planning for efficiency at scale, there is a risk that

²⁵ Gladstein, Neandross & Associates, *California Heavy-Duty Fleet Electrification Summary Report 55*, March 2021 (finding that managed charging can produce significant charging cost savings for MHD EV fleet operators while also minimizing increases in, or even decreasing, peak demand), available at <http://blogs.edf.org/energyexchange/files/2021/03/EDF-GNA-Final-March-2021.pdf>.

²⁶ See N. Deforest *et al.*, “Day ahead optimization of an electric vehicle fleet providing ancillary services in the Los Angeles Air Force Base vehicle-to-grid demonstration,” *Applied energy*, 210, 987-1001 (Jan. 15, 2018), available at <https://reader.elsevier.com/reader/sd/pii/S0306261917309418?token=E8D0250737AB10AAC9EEA328FB9BA69E84A169C21F6526EE5DAAC144A2C46CAB85BA8CF91F6B29DC4E33D2DFD65CF399>. Other capabilities including demand charge management, integration of intermittent renewables, and peak load reduction, are being explored by Nuvve Corporation and American Honda Motor Co., Inc. See Nuvve Press Release, “Nuvve Corporation and Honda are Collaborating to Demonstrate the Benefits of Vehicle Grid Integration (VGI),” (April 25, 2019), available at <https://www.prnewswire.com/news-releases/nuvve-corporation-and-honda-are-collaborating-to-demonstrate-the-benefits-of-vehicle-grid-integration-vgi-300837982.html>.

²⁷ Gladstein, Neandross & Associates, *California Heavy-Duty Fleet Electrification Summary Report 55*, March 2021 (estimating that peak load reduction could be on the order of megawatts for fleets with solar and storage collocated with EVSE), available at <http://blogs.edf.org/energyexchange/files/2021/03/EDF-GNA-Final-March-2021.pdf>.

electrification will take place without the technical and business prerequisites that make efficient VGI supported by DERs possible. To that end, the Board’s order on MHDV electrification should expressly include targets for VGI and behind-the-meter resources; electric rates and other pricing that incentivizes charging customers to use the grid efficiently, complemented by authorization to use submetering capabilities in EVSEs for billing purposes; and data, technology, and communication standards for interoperability (as further discussed in section 9 of this Discussion. In addition, these technologies are often part of the least-cost solution to New Jersey’s energy transition needs and because their benefits accrue significantly to parties other than the charging customers themselves, it would not be fair or efficient to rely on fleets alone to finance their full cost. Rather, fleet owners who bring these capabilities to the system should have an opportunity to see some benefit upfront. By reducing the cost fleets to install renewable energy generation and storage alongside charging infrastructure, such as through their inclusion in recoverable make-ready costs to the extent feasible and providing clear opportunities for third-party investment in these resources at fleet charging sites, the Board would be sending a market signal to electrifying fleets that is more reflective of the social benefits these investments create, including their important contributions to the resiliency and sustainability of the electric grid.

The Straw Proposal asks whether storage present at MHD sites should receive incentives on par with energy storage at other, non-EVSE sites if it does not participate in demand response. In response, we would argue that demand response programs are only one way in which vehicle or fleet owners can use to manage their charging and seek to realize value for doing so. As long as a customer is experiencing price signals that reward flexibility, including being subject to any type of time-varying price, it is reasonable to infer that on-site storage co-located with vehicle charging is helping to enable that flexibility, such that the storage should be eligible for the same incentives as other utility scale fixed storage. Moreover, the storage capabilities of the vehicles themselves should be cognizable in the Board’s battery storage programs.

The Straw Proposal asks Stakeholders whether there should be a “threshold” at which incorporating renewable energy, storage, or V2G into charging infrastructure should be a condition of Make-Ready. We would not recommend such a threshold, because these elements are appropriate wherever vehicle charging will be taking place, at any scale – subject only to site constraints. Instead, we would recommend that targeted levels of VGI participation be set; for the EDCs to be held accountable for achieving those targets, while giving EDCs some flexibility in determining how best to achieving those targets; and, as discussed above, that utilities funding and/or facilitating VGI/DER as part of Make Ready be among the tools an EDC can leverage to achieve its VGI and storage/renewables targets.

8. To enable successful MHDV electrification in New Jersey, the BPU and the EDCs must proactively engage with fleets.

This section is responsive to the sixth Staff request for input on page 3, and the seventh Staff request for input on page 18 of the Straw Proposal.²⁸

²⁸ “6. Technical and planning support for private entities seeking to establish proprietary EV Ecosystems for their fleets.” Straw Proposal at 3. “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?” *Id.* at 18.

The enormous impact widespread MHDV electrification could have on New Jersey’s electric grid means that coordination and planning by fleet owners and operators will be a critical aspect of this transition. These efforts, however, are made substantially more difficult by the fact that many fleets are unaccustomed to being large-scale electricity customers and have little experience engaging in the utility planning process. It is therefore essential that utilities be active partners with fleets pursuing electrification, and the BPU can facilitate this by establishing minimum expectations for utility engagement with fleets.

The Straw Proposal does little to encourage fleet-utility engagement. Each EDC should designate a fleet ombudsman within the company who has responsibility for helping fleet owners and operators navigate the application process to connect charging infrastructure. This person provides a single point of contact for fleets to help move their project along. Utilities must also work closely with fleets to determine when and where fleets are planning to electrify and the associated charging equipment needed, both for near-term projects and long-term targets. With the enormous local electricity loads MHDV charging can require, particularly for a fleet of vehicles charging at a depot, early communication between fleets and their utility can help determine which fleets can electrify today, and where and when grid upgrades will be needed to facilitate further electrification. Utilities are uniquely well positioned to inform fleets about options such as VGI and DERs that can both decrease charging costs and mitigate the need for grid upgrades that can delay fleet electrification efforts, while fleets are uniquely well positioned to inform utilities of the barriers they face in their electrification efforts and provide input on how utility programs could help them overcome those barriers.

Fleets and utilities must similarly work together to align data collection. The widespread availability of networked chargers can allow fleets and utilities to coordinate the data collection that is often required as part of public funding for charging infrastructure. And, by sharing this data the two parties can share the task of analyzing this data, something both fleets and utilities often fail to plan for.

In addition to the EDCs’ need to work actively with fleets, the BPU’s own outreach efforts could be improved upon by expressly incorporating fleets; for example, the working group that in the Straw Proposal is called the “EDC-Industry working group” sounds too narrow to be useful, with fleets—which can be part of a wide range of industries, as well as non-industry entities as in the case of government fleets of all types—as a particularly glaring omission.

EDF, together with Calstart, the North American Council for Freight Efficiency, and RMI, has devoted significant time and resources to the task of understanding the customer (fleet) perspective on the challenges of truck and bus electrification by convening a group of fleet representatives from a variety of market segments earlier this year. These fruitful discussions have resulted in a set of recommendations by fleets to utility companies.²⁹ As truck and bus fleets are not presently major customers of electric utilities—but are expected to become major customers—utilities and their regulators would benefit from considering their recommendations seriously, and we incorporate these recommendations as Exhibit A to these comments. These recommendations cover the following themes:

1. Utilities need to proactively plan for electrification and engage fleets.

²⁹ Fleet Readiness Group, *Fleet Guidance for Utilities*, October 2021, available at <http://blogs.edf.org/energyexchange/files/2021/10/FRG-Fleet-Guidance-for-Utilities.pdf>.

2. Utilities need to develop the modern grid and electricity rates necessary to charge large fleets.
3. Utilities should partner with fleets to ensure that charging equipment installation processes meet the needs of the fleets.

Finally, once the MHDV electrification programs are in place, the EDCs must include fleets in their marketing, education, and outreach. The need for extensive outreach to fleets may be counterintuitive because in the past, large commercial electric customers have typically been types of entities with a long history of extensive, and sophisticated, electric consumption. However, in the context of fleet electrification, entities with essentially no prior experience as large commercial electric customers will have to rapidly transform how they do business as part of adapting to the zero emissions transportation and freight future that the State will require them to embrace. In fact, the EDCs, as comprehensively regulated entities that are highly aware of state energy policy, may be aware of what changes are coming to fleet businesses well before many fleets are themselves aware. As such, EDCs can provide unique expertise and insight in helping the diesel fleets that are domiciled within their footprints understand the upgrades they will need to make and how to use the new vehicles they will ultimately procure in a manner that is well integrated with the grid and that yields maximum benefits for themselves, other ratepayers, and society.

9. The BPU should require consistent standards as part of all EV programs.

We believe this section to be responsive to the fourth Staff request for input on page 3 of the Straw Proposal.³⁰ However, the full intent of this request is not obvious and would benefit from additional clarification.

Efficient operation of an electric MHDV ecosystem requires adequate standards that allow the multitude of technologies involved to share a variety of information. The BPU should require that the EV programs promulgated by the EDCs incorporate consistent standards, including technology and communications standards as well as standardized data formats for metering and submetering data, as well as billing data. The use of uniform standards allows for more efficient equipment usage, enables more EV supply providers (“EVSPs”) to participate in the charging marketplace, enables third party systems like EVSE submetering to be seamlessly incorporated in billing, and allows fleet owners to change EVSPs without undue cost, confusion, and complexity.

The BPU wouldn’t need to create or identify the standards itself, as leading states such as California have already created ones New Jersey can easily adopt. For example:

- Open Charge Point Protocols (“OCPP”) standardizes communication between EVSE and EVSPs.³¹

³⁰ “A commitment to encourage the electrification of MHD vehicles and larger light-duty fleets through support of the necessary charging infrastructure, which must be capable of supporting the emerging High-Powered DC Fast Charging standards while maintaining compatibility with existing lower-powered DC chargers.” Straw Proposal at 3.

³¹ Standardizing communication between EVSE and Electric Vehicle Service Providers (EVSP) allows systems from different vendors to communicate with each other. This prevents companies from using proprietary communication standards, which could strand assets if the EVSP goes bankrupt. In California, where the electric vehicle marketplace has had some time to develop, some EVSE funded by ratepayers have been rendered useless this way. By adopting a generally accepted standard, New Jersey can avoid that risk.

- Open Charge Point Interface (“OCPI”) standardizes communications among EVSPs³²,
- For communications protocol between an EV and charger, multiple competing standards exist,³³ but as the marketplace has not yet settled on a single such standard, the Board should work with stakeholders to choose one that is appropriate for New Jersey and aligns with other United States jurisdictions.
- Open Automated Demand Response (“OpenADR”) standardizes communications between EVSE and the utility and, where applicable, the regional transmission organization.³⁴

By requiring the adoption of uniform standards early on in the transition to electric MHDVs, and regularly reviewing whether these standards are up-to-date and responsive to emerging issues, the BPU can ensure that New Jersey’s EV charging market remains competitive, and that system benefits EVs can provide remain exploitable.

10. Electric pricing needs to allow for a favorable business case for electric vehicle charging while also incentivizing charging customers to use the grid in the most beneficial possible way.

*This section is responsive to the ninth Staff request for input on page 3, and the Staff requests for input on the topic of rate design on page 16 of the Straw Proposal.*³⁵

The Straw Proposal identifies demand charge mitigation as one of the key challenges of rate design for MHDVs. As far as that goes, the framing is reasonable insofar as it recognizes that a key challenge is to get the cost of charging on a per-mile basis to be competitive with the cost of diesel fueling.³⁶ This is a crucial part of getting electric pricing right, and we encourage the Board to pursue this line of thinking.

However, the Straw Proposal’s framing in certain respects oversimplifies the issue because actual demand-based pricing is more complex and nuanced than the Straw Proposal assumes based on its own definition of “demand charge.”³⁷ In fact the bills of commercial customers reflect a variety of demand-based items, and they can be based on maximum annual

³² A communication standard between EVSPs allowing for seamless usage, pricing, and billing for customers using a different EVSP from their usual one. A key application of this standard is a roaming charging rate allowing EVs to receive one bill when utilizing different EVSP networks.

³³ A communication standard between the EV and the EVSE gives EV drivers a safe and easy way to identify themselves at the charging station and enables vehicle and grid communication for advanced charging grid services. Contenders include ISO15118 and IEEE 2030.5.

³⁴ By standardizing signals for load and generation flexibility, both at the utility level and, where applicable, at a regional transmission organization, EV charging customers can manage their demand in a manner that maximizes system value as the electric transportation marketplace matures. OpenADR is currently the leading open protocol for demand response.

³⁵ “The reform of utility rate structures, which may act as barriers to mass deployment of EV infrastructure, including the management of commercial and industrial demand charge structures such that the effective cost of electricity for public charging facilities does not exceed an agreed to amount on a per kilowatt-hour (“kWh”) basis.” Straw Proposal at 3–4. “This Straw requests feedback on the best manner in which to achieve demand charge reductions.” *Id.* at 16. This Straw also seeks input on use-based rates for various sectors of MHD charging.” *Id.*

³⁶ “The Straw anticipates that the set point would be benchmarked to that EV charging remains below the equivalent cost of diesel or gasoline on a per-mile traveled basis.” Straw Proposal at 16.

³⁷ According to the Straw Proposal, “Demand Charges” are an existing feature of many rates whereby large users of the electric system pay for their contribution to the fixed costs of operating the electric system. In most cases, Demand Charges are set at a customer’s peak annual usage.

demand, or seasonal maximum, or maximum coinciding with certain pre-determined peak hours, or maximum coinciding with actual peak hours, or any combination of the foregoing. In other jurisdictions, novel forms of demand-based billing are emerging, including the subscription rates being promulgated in California, which are intended to be workable for charging customers. It is also important to recognize that some billing components that are based on demand represent pass-throughs of PJM costs. To seriously consider whether and how demand-based components may undermine the electrification value proposition for fleets, and how those components could be modified to provide the desired incentive, will likely require detailed, fact-specific analysis. Any such analysis must consider the actual price signals currently or potentially in the future faced by charging customers in New Jersey, including the various demand-based components as well as actual volumetric pricing, including the hourly pass-through of PJM energy prices that many commercial customers face unless they elect third party supply.

Moreover, the Board must be mindful of the incentives that particular price structures might provide for VGI, especially early on, when rates may teach newly electrifying customers particular charging behaviors and habits, including whether and how they make use of behind-the-meter resources such as PV and storage. For many customers, including many fleet customers, the actual impact of their particular individual demand peak on system needs may be minimal because their peak doesn't necessarily coincide with that of other customers relying largely on the same grid assets; for them, volumetric pricing that encourages usage during approximately more desirable times may be just as useful for stimulating approximately optimal behavior (and easier to understand) than a demand-based price signal would be. To that end, the Straw Proposal's recommendation that each EDC be required to "offer a time-of-use rate for MHD Fleet EV chargers designed to reward customers who charge during periods when electricity is less expensive" on the theory that "[m]anaged charging can avoid the incurrence of large additional fixed costs that could occur if most vehicle charging were to take place during peak or super-peak hours" is sound—although the specifics of what such a time-of-use rate looks like for customers who pay hourly energy charges will need serious thought. It is worth noting that hourly energy pricing for commercial customers is *not* the prevailing practice in California, the state that leads the nation in electric MHDV deployments, and that states such as New Jersey have an opportunity to innovate in this area, but they must be mindful that this pricing is untested for fleet charging, and significant analysis as well as vigorous education and outreach will be required.

We would emphasize the need to recognize that fact that a single fleet charging rate will not be workable for the full panoply of fleet-charging use case. As discussed above, depot charging presents completely different challenges and opportunities than public charging, and fleets also diverge widely from one another. A demand charge mitigation approach that works well and is sensible for some fleets in some contexts may not work in others, and in some use cases demand charges may not be the challenge at all but other issues may be salient. Again, we would stress the need for fact-specific inquiries that take into account actual price structures available to fleets in New Jersey and actual fleet needs and opportunities.

Another salient issue is complexity: Commercial electric rates, especially those designed for large customers, can be extremely complex—in all likelihood, too complex for fleets that are entirely new to the realities of being a large commercial customer. Worse, to the extent the earliest electrifying customers have bad experiences as they are learning to manage these complex price signals, there is a risk of poisoning the well as the transition is just getting

underway. As such, simplified rates that spare these new charging customers from needing a highly sophisticated understanding of electric procurement, while still rewarding efficient charging behaviors, may be vitally important for a smooth transition.

Regardless of what initial rates applicable to fleet charging look like, the design of price signals that are supportive of efficient electrification will be an iterative process. As the energy transition proceeds and the electric vehicle market and the grid continue to evolve, EDCs will certainly need, periodically, to evaluate the effectiveness of their rates at enabling electrification and promoting optimal charging behavior to mitigate build-out costs.

In addition to the foregoing, we observe that the Straw Proposal also wisely notes the need to “keep[] metering costs low”; to that end, we strongly recommend the Board embrace the capability of networked EVSE equipment to provide consumption information that is sufficiently granular and adequate to provide a viable alternative to additional revenue-grade meters as a basis for calculating utility bills.³⁸

11. To ensure EDC and Board accountability, the Board should require that cost-effectiveness be determined in a consistent, robust manner, and should set clear reporting requirements and metrics for evaluating the success of utility electrification efforts.

Meeting the MHDV electrification goals the BPU should be explicitly adopting, as outlined in section 1 of this Discussion, will be a long-term process that requires accountability on the part of both the Board and the utilities. As explained throughout these comments, medium- and heavy-duty electric vehicles differ significantly from light-duty vehicles, including in differences in power needs, charging behavior, and environmental benefits, requiring new programs and policies to successfully electrify this sector. The Board must ensure that MHDV electrification programs and investments are evaluated prospectively in a consistent, robust manner that gives weight to the societal benefits of MHDV electrification, and must establish metrics for quantifying the impacts and extent of MHDV electrification, paired with reporting requirements meant to provide the information targeted by those metrics, in order to measure progress on this topic. Doing so is essential for the Board to hold utilities accountable for meeting its MHDV electrification goals, and for lawmakers, communities, and other stakeholders to hold the Board accountable for its own efforts.

The Board should require that the cost-effectiveness of MHDV electrification investments and programs be evaluated in a rigorous manner, using a cost test that accurately

³⁸ Submetering-like functionality that is sufficiently reliable to be used as the basis for pricing is built into electric vehicle supply equipment. This has been demonstrated by Xcel Energy through a pilot. *See*, Xcel Energy, *Compliance Filing – Residential Electric Vehicle Charging Tariff*, Minnesota Public Utilities Commission Docket No. E002/M-15-111 & E002/M17-817 at 10 (“With EVSE that can provide billing quality data of on and off peak charging, customers are able to avoid the high cost of having a second meter on their premises”) and 21 (“Through on-site product testing, both vendors’ charging equipment met the requirement for metering data at an accuracy of plus or minus two percent, a standard that is enforced by the [Minnesota Public Utilities] Commission for traditional metering technology.”) (May 31, 2019), *available at* <https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPop&documentId={4E71E55E-AEE5-43B2-87B7-4E1BDFCC47C9}&documentTitle=20157-112040-01>.

values the environmental and public health benefits that these investments will unlock for New Jersey residents. The societal benefits (or avoided societal costs) of electrified MHDVs are enormous, meaning the failure to consider them would significantly skew any cost-effectiveness analysis on the subject. As the Board has recognized and as discussed above in these comments, fossil fueled MHDVs in New Jersey are currently responsible for a disproportionate share of local air pollution, particularly in overburdened communities, and greenhouse gas emissions. Only a cost-effectiveness test that recognizes the value of cleaner air and climate change mitigation will allow the BPU approve portfolios of electrification projects that maximize net benefits. Accurately quantifying these air pollution benefits is critical to recognizing the extent to which a broader range of utility expenditures in this area, including make-ready cost allowances to include charging infrastructure for private fleets, are a net-benefit to New Jersey.

The Board will need to identify and regularly collect data on a variety of other metrics related to grid infrastructure, finances, equity, and environmental impacts to measure whether utilities are doing enough to meet its MHDV electrification goals. We recommend the following types metrics as a starting point:

- Equity – e.g., the number of publicly accessible chargers for MHDVs deployed in overburdened communities; the percentage of MHDV electrification program participants that are small businesses; improvements in air quality, particularly along major transit corridors and in overburdened communities;
- Deployment Targets – e.g., the number of private chargers for MHDVs deployed; the number of transit bus, school bus, and other public fleet vehicles that have been electrified; the location of all EV chargers deployed to ensure there are no gaps in coverage;
- Vehicle to Grid Integration – e.g., the number of chargers deployed that incorporate VGI capabilities; amount of renewable energy utilized by electric MHDVs or load is shifted to times of low electricity demand and/or high renewable penetration;
- Behind-the-meter Distributed Energy Resources – e.g., number of chargers deployed with on-site storage and/or renewable energy generation;
- Electricity Rates – e.g., number of fleets enrolled in an EV-specific rate in each service territory, success at shifting to low demand or flattening demand for various market segments and/or applicable rates, relative affordability of charging for various segments based on rates;
- Marketing, Education, and Outreach – e.g., the number and types of fleets who have received education and/or technical assistance on the topic of fleet electrification;
- Make ready investment – e.g., the average number of days from customer application to make-ready completion by utilities, average total construction cost per charging port by major cost category (i.e., site design, permitting, transformer, electrical panel, conduit, wiring, trenching, accessibility, other demolition and construction, EVSE equipment, and labor).

Utilities are naturally positioned to be the primary source of information for the data related to many of these metrics, and such data should be included as part of, or in conjunction

with, the annual load research reports discussed in section 3 of this Discussion. Regularly collecting this data, and making it publicly accessible, will also ensure the Board maintains responsibility for progress towards its MHDV electrification goals.

MHDV electrification will not be a one-time project for the Board or utilities, but rather will require regular assessment and revision of programs to identify successes, address failures, and redirect focus and funding where it can do the most good. The adoption of clear metrics and reporting requirements would help the Board to achieve the aggressive MHDV electrification goals it should be targeting, and keep the Board and the EDCs it regulates accountable for their work on these goals.

III. CONCLUSION

EDF respectfully requests that the Board consider the foregoing comments in taking any action in this docket and proceeding to expedite the State's readiness for widespread electrification of transportation. We appreciate the opportunity to comment on this crucial piece of New Jersey's decarbonization, and welcome future engagement as the process continues.

Exhibit A

Recommendations of the Fleet Readiness Group

(attached behind)

Fleet Guidance for Utilities

During the first half of 2021, the Fleet Readiness Group – a collection of fleets operating class 6-8 vehicles that are early adopters for zero-emission solutions and the sponsoring NGOs – Calstart, NACFE & RMI, and EDF, explored the barriers and potential solutions fleets face when considering charging electric heavy-duty trucks. Below is the guidance from this group for utilities seeking to work with fleets to accelerate the adoption of electric trucks.

1. Utilities need to proactively plan for electrification and engage fleets.

Utility Planning to Serve EV load – Utilities should proactively study load growth and distribution grid impact to assess where fleet charging demand is likely to occur within their service areas and proactively invest in readying the grid to be able to meet this demand. With the accelerated progress of zero-emission truck technology along with 15 states and growing considering zero-emission truck sales standards, it's clear that many companies will be moving a significant portion of their fleets to electric vehicles. Information about where load growth is likely to occur, including distribution center locations, large logistics facilities – such as ports, and major trucking corridors – is readily available to utilities, although they may not customarily anticipate load growth in such locations based on historical patterns. Utilities should assess potential system upgrades and needs to meet the market penetration rates under consideration by policymakers, such as having 30% of all new medium and heavy-duty vehicles be zero-emission by 2030 – which has been referenced by Congress, 15 states, and major manufacturers.

Fleet Engagement in Rulemaking Processes – The process used by utility regulators (commonly utility commissions) that informs the development of electricity rates, charging infrastructure investments, and incentive programs is opaque to fleets. It is also challenging for fleets to track and engage in rate cases across the thousands of utility service areas. As a result of many factors, including the difficulty stakeholders face when trying to engage in these regulatory proceedings, few utilities have proposed, and few regulators have approved the programs that are critical to accelerate fleet electrification within their jurisdiction. Utilities and public utility commissions should redouble efforts to get fleet input before utilities file proposed EV programs. With the aid from NGOs, such as the ones involved in this activity, fleet needs can be communicated in the form of written guidance, sharing of best practices from working with other utilities, and informal support. Then, fleets and expert NGOs can engage in proceedings as appropriate.

2. Utilities need to develop the modern grid and electricity rates necessary to charge large fleets.

Rates – For fleets, the core promise of electrification is significant fuel cost savings that results in lower total cost of ownership for the electric vehicle. It is critical that rate structures be transparent, predictable, and reflective of the costs of service as well as the ability for heavy-duty electric vehicles to serve as a grid asset. Utilities need to work with fleets to ensure they understand the current rate structures and potential rate options to optimize their use case and charging plans, and to develop some initial rate analyses based on different vocations and vehicle types. Rates should be designed to reward fleets that charge during low-cost times and to avoid unnecessary spikes in demand. Rates and other price signals should also recognize and reward the value to utilities that large fleets can provide, including by charging at times of high curtailment and being a flexible load.

Support Lowest/Low-cost Solutions, such as Distributed Energy Resources (DERs) – Incentive programs should be designed to support the development of lowest or low cost solutions to the electrical capacity needed for fleet electrification. Solutions such as managed charging, onsite battery storage, and onsite electricity generation, can reduce the peak demand from fleet charging. This translates to lower costs to utilities in delivering the required power and lower charging costs for fleets. Most infrastructure incentive programs

available today focus solely on the cost of electric vehicle support equipment (EVSE), installation, and getting the required power to the site. As such, these programs are missing a critical opportunity to save money for fleets and ratepayers.

Utilities Investments in Distribution System Updates – Fleets should be insulated from the cost of grid upgrades needed to transform the truck sector. The transition to electric vehicles is a societal priority that is being accelerated by public policies seeking to reduce local and global air pollution. This transition will give rise to significant new sales opportunities for electric utilities, as a single fleet can consume several megawatt-hours of power daily, including predictable consumption outside of peak demand hours. Moreover, although the new load is caused by fleets that electrify, the total cost of serving all those fleets will depend largely on utility decisions, including the extent to which they plan holistically, work with customers to manage their load, rely on non-wires solutions, etc. Indeed, to the extent this new load can be shaped to improve system utilization, it can lower system costs for all ratepayers. Asking fleets to cover the costs of distribution system upgrades would prevent many fleets from making the transition to electric trucks. This burden would be especially challenging for smaller fleets, which can often face significant barriers to access capital. Utilities are the appropriate entities to invest in distribution system updates.

3. Utilities should partner with fleets to ensure that charging equipment installation processes meet the needs of the fleets.

Fleet Ombudsman – It is recommended that fleets work with an ombudsman from the application process through installation (someone within the utility that can move the projects forward).

EVSE Location – The fleet should work in partnership with the utilities to determine the best location for charging infrastructure installation on the fleet site to provide optimum yard flow and productivity. Fleets should be enabled to make the final decision on the charger location within the fleet yard. Utility programs should recognize the primacy of fleet considerations in determining charger location. Utility and regulators should create a standard for point of delivery of the power, which could help clarify how any additional costs associated with charger citing will be allocated between parties.

Planning for Future Capacity Needs – The truck industry is in the very early stage of fleet electrification. Fleets are making the commitment to install charging equipment because they are interested in increasing their adoption of EVs in the years ahead. It's most cost effective for fleets and for utilities to build for future growth in electric power demand, rather than incrementally adding capacity to their site each time they acquire a new cohort of electric vehicles. Utilities should work with fleets to understand their future plans and a streamlined future EV fleet expansion should be a consideration in determining the total power capacity needed for any site build out, including factoring in the potential of behind-the-meter electricity generation and storage to reduce capacity upgrades. It is also very important that the power is 'clean' power, and the transformers are upgraded where needed (i.e., delta vs. wye).

Installation Timelines – In the early stages of EV development, flexibility is required for order to delivery to implementation since lead times can be extended and unpredictable. Utilities and fleets should strive to have vehicles in service as soon as vehicles arrive and all parties need to work together to adjust schedules as required.

Lifetime Timelines – Utilities need to consider assumptions around equipment lifetime when that is part of/ a condition for utility support (and in those cases where utilities are subsidizing or owning the EVSE). For example Operating the initial installed chargers for ten years does not allow the potential for upgrades as the technology advances. Fleets need flexibility that would allow the chargers to be upgraded or replaced over time. This is

especially true, as most third-party logistic contracts are 3 to 5 years. Utilities should work with fleets to establish project timelines that work for existing fleet operations.

Reporting Timeline – When public funds are used to support fleet electrification whether to help cover the costs of vehicles or the infrastructure needed, many fleets must be ready to provide charging data as part of the agreement. Many funding opportunities require fleets to provide charging data for up to 5 years. Today, most of the charging systems have network capability that help support this requirement. Fleets should suggest network connectivity with their utility partner to better enable data gathering by the utility. As electrification expands, consideration also needs to be given to the task of both data gathering for accountability purposes and both the fleet and utility spending resources to review the data. The data gathering activity is often a resource burden that few fleets and utilities plan for and should.

Approved Charging Equipment –To assist fleets in choosing charging equipment a single clearinghouse should be established, but such clearinghouses need to ensure competition and technology choice. Fleets recommend using a standardized list of approved charging equipment across many utilities to avoid situations where chargers are approved by one utility yet waiting on other utilities to approve the same chargers. For example, the current options from Southern California Edison (SCE) is limited for high KW chargers and actually needs to be rapidly expanded as new technology such as higher power chargers comes on board or have an expedited approval process as part of the process.

Also, the list of approved items should be expanded to include integrated software and components such as connectors. Fleets have reported being delayed over four months because of software on a battery storage system.

Application Process – There is great room for making the application process for utility-based infrastructure programs more efficient. If an application is rejected based on a technicality in the submission process, fleets can be required to start over vs correcting the technicality and allowing the process to complete.

Reimbursement – The process utilities use for reimbursing fleets for costs need to be understood and transparent by all parties. As an example, some fleets have realized discrepancies with the level of reimbursement from the SCE program in California.